

YALE UNIVERSITY LIBRARY



3 9002 06679 1881

A STUDY OF THE ATTITUDES OF
YALE MEDICAL STUDENTS,
HOUSE STAFF AND FACULTY TOWARD
POPULATION GROWTH IN THE UNITED STATES
AND RELATED ISSUES

JOHN F. STEEGE

1972

YALE



MEDICAL LIBRARY

A Study of the Attitudes
of Palo Medical Students
House Staff and Faculty toward Population Growth in the
United States and Related Issues

(TITLE OF THESIS)

for the purpose of individual scholarly consultation or reference is hereby granted by the author. This permission is not to be interpreted as affecting publication of this work or otherwise placing it in the public domain, and the author reserves all rights of ownership guaranteed under common law protection of unpublished manuscripts.

John F. Steege
Signature of Author

May 13, 1972
Date

A STUDY OF THE ATTITUDES OF
YALE MEDICAL STUDENTS, HOUSE STAFF AND FACULTY
TOWARD POPULATION GROWTH IN THE UNITED STATES
AND RELATED ISSUES

by

John F. Steege
B.A. Stanford University, 1968

A Thesis Submitted to the Faculty in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Medicine

Yale University School of Medicine
Department of Obstetrics and Gynecology
New Haven, Connecticut

April 1, 1972



Digitized by the Internet Archive
in 2017 with funding from
Arcadia Fund

<https://archive.org/details/studyofattitudes00stee>

To Debrie

Acknowledgements

Thanks and appreciation are due to many members of the Department of Obstetrics and Gynecology, especially Dr. Nathan Kase, for their help and support.

Dr. Barry Margolin, and especially his student, Mr. Don Archibald, of the Department of Statistics gave generously of their time and knowledge in helping with the statistical analysis.

The cheerful and patient assistance of the staff of the Yale Computer Center, especially Mr. Edward O'Neill and Mrs. Terry O'Connor, was invaluable in solving the many programming problems.

The encouragement, tactful counsel, and wise judgement offered by my advisor, Dr. Philip Sarrel, in an atmosphere of great interest and good humor, were largely responsible for making this project a worthwhile and rewarding experience.

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction and Review of the Literature	1
II. Methods	8
III. Results	15
A. Biographical Data	15
B. Perceptions of Population Growth	21
C. Some Alleged Contributing Factors to Population Growth	30
D. Factors Tending to Decrease Population Growth	37
1. Birth Control	37
2. Abortion	44
3. Sterilization	48
4. Adoption	49
5. Government Policy	51
E. Possible Effects of Population Growth	53
F. The Doctor's Role in the Population Issue	57
IV. Summary	65
V. Conclusions	70
VI. Bibliography	71
VII. Appendix (The Questionnaire)	76

I. Introduction.

As a reflection of growing national interest in, and concern about, population growth, President Nixon in 1971 appointed a 24-member "Commission on Population Growth and the American Future" to examine alternative policies and plans for future government funding. Among the important factors in the effectiveness of government policy will be physicians' personal attitudes and professional practices in the fields of population growth, contraception, abortion, sterilization, and adoption. This is a study of knowledge of, and attitudes toward, these issues held by Yale medical students, house staff, and faculty, as well as a sample of New Haven community physicians.

Review of the Literature

Concern over the adverse effects of rapid population growth became great in many developing countries during the 1950's (Berelson, 1966; Cook, 1966; Ng, 1964). Within the United States, discussion of population growth escalated dramatically in the late 1960's, as more and more physical and social scientists began writing extensively about the effects of population growth in a highly industrialized society. Environmental pollution, overcrowding, and waning supplies of natural resources, food, water, and energy were often said to be of critical concern for this country (Eipper, 1970; Barclay, 1970; Hardin, 1968; Wilson, 1967; Walker, 1970; Tschumi, 1970; Prindle, 1969; Ehrlich, 1971; Greep, 1969; Roch, 1968).

The range of opinions in this literature has been broad, and the debate heated. Ansley Coale feels that there is "no valid reason for hasty action" on population growth, while Paul Ehrlich claims, "the next decade will determine man's fate as an evolutionary failure." The bulk of writers, however, show serious concern over the ability of the United States to cope with these inter-related problems during the next generation or generations.

Not only our scientists, but also the American people agree that

population growth is a serious problem for the United States, as indicated by several opinion polls:

Table 1. Public Opinion on Population Growth.

	<u>1965 (1)</u>	<u>1967 (1)</u>	<u>1972 (2)</u>
What about the rate at which the United States population is growing? Do you feel this is a serious problem or not?			
<u>Yes:</u> 54%	54%		
<u>No:</u> 39%	40%		
Is the population growth of the United States <u>Serious:</u>		65%	
a serious problem, a problem, but not so serious, or no problem?		<u>Not so serious:</u>	26%
		<u>No problem:</u>	7%

1) Kantner, 1967.

2) Commission on Population Growth and the American Future, 1972.

In these surveys, however, population growth was ranked by the respondents as less important than racial discrimination, crime, poverty, and pollution.

Attempts to curb population growth have involved promoting the use of all the various contraception methods (Berelson, et al, 1966, p. 375-450) as well as sterilization (Nortman, 1971, p. 37), and in some countries, notably Japan and eastern European countries, abortion (Klinger, A., in Berelson, et al, 1966, p. 465-476; Frederiksen, 1968; Diggory, 1970). Recently the assumption that voluntary family planning is the only appropriate and feasible method of slowing population growth has been challenged, in view of the small chance that significantly improved contraceptives will be marketable in the near future (Djerassi, 1969, 1970). Many writers have suggested various methods of encouraging or compelling people to have fewer children (Berelson, 1969; Davis, 1967; Ehrlich, 1968; Kangas, 1970). The discussion of changes in tax structure and welfare benefits, outright monetary rewards for remaining childless or being

sterilized, intensified education in population information, augmented research in reproductive biology, changes in the social roles of women, and compulsory sterilization, contraception, and abortion have been reviewed by these authors in terms of their scientific readiness, political viability, administrative feasibility, economic capability, ethical acceptability, and presumed effectiveness. Berelson (1969) concluded that voluntary family planning is presently the most practical approach in sum, and commented that "greater measures to meet the problem must rely on heightened awareness of what is at stake, by leaders and masses alike." Increased use of voluntary family planning methods has been held partially responsible for the recent decline in fertility for all social classes in the United States (N.Y. Times, 3 March 1972). The contribution of "heightened awareness" to this phenomenon does not lend itself to easy measurement.

Coincident with the increased awareness of population growth as a problem for the United States has been a change in public attitudes toward birth control, abortion, and sterilization. While only about 10 to 15% of Americans approved of "discretionary abortion" in five Gallup polls (1962 through 1969) and in the National Fertility Study of 1965 (Blake, 1971), a more recent survey by the Commission on Population Growth and the American Future (1972) revealed that "half the respondents believe that the decision to have an abortion should be made solely by the couple and their doctor." Only 6% believed abortion should not be permitted at all, despite the fact that the sample was 25% Catholic, and the age structure included a disproportionate number of older people and people with less than a high school education. Half the respondents felt that abortions "should be permitted when the couple has all the children they want," and of this group two-thirds believed that "the government should make abortion available to all women who want it."

Sterilization, especially vasectomy, has become increasingly popular

in the United States, jumping from about 100,000 vasectomies per year in the 1960's to around 750,000 per year in 1970 according to estimates by the National Disease and Therapeutic Index, which reflects only private medical practice. This total does not include vasectomies done in the more than 125 special vasectomy clinics in the United States (Amer. Med. News, 28 Feb. 1972, p. 14).

Surveys in 1965 and 1967 (Kantner, 1967) showed 85% of respondents in favor of easy accessibility to birth control information "to any married person who wants it," while 50% responded "yes" to a similar question about "any single adult person who wants it." In the study by the Population Commission (1972), 87% believed that the "government should make information about birth control available to all men and women who want it," and 67% felt that contraceptive supplies should be made available by the government to any interested person. None of these surveys asked specifically about making contraception available to adolescents.

Attitudes of physicians have been changing rapidly, along with those of the general public. Guttmacher (1947) in an early study, showed that 70% of physicians in a large sample of obstetricians, gynecologists, and general practitioners favored the availability of birth control for any married female asking for it. Active promotion of birth control by doctors was less common, however; in Spivack's survey of 550 doctors (Spivack, et al., 1963), three-fourths of physicians thought of birth control as a "supplementary service provided only at the patient's request." Religion was seen as a key factor in attitudes toward birth control, as 25% of Catholics approved of the use of "chemical and mechanical contraceptive procedures," compared to 97% of doctors of other faiths.

Debate in medical circles over abortion has polarized the attitudes of physicians (Hall, 1971; Ramsey, 1971) as laws regulating abortion have been changing rapidly in recent years (Hannaford, 1970; Welch, 1971). Many

doctors are strongly opposed to abortion, offering moral, religious, and philosophical reasons for their stand (Kilroy, 1971; Machanik, 1970), especially for the case of the teenager (Harrison, 1969; Smithells, 1966). Proponents have suggested that instruction about abortion be included in high school sex education courses (Gendel and Gleason, 1971) and advocated government subsidization of abortion services (Tyler and Schneider, 1971).

Physicians' attitudes are an important variable influencing the effects of changes in abortion laws, as evidenced by events in Georgia (Walker and Mulka, 1971). After a law was passed in 1967 allowing abortion for the preservation of maternal physical and mental health, and in cases of rape, incest, or the high likelihood of fetal abnormality, the previous ratio of seven abortions done for each 1000 live deliveries did not change, and the vast majority of obstetricians did less than four abortions per year. Many physicians in the study said they feared becoming "known as an abortionist."

Little quantitative data is available, however, on the attitudes of physicians toward the phenomenon of population growth and the degree to which these issues affect the counselling of patients. Darney (1970), upon interviewing 20 married medical students and 20 married college students, found that both groups desired more children than they felt ideal for the average American family (a mean of 2.5 children). "Most of the students felt that overpopulation in the United States was a problem which could become more severe in the future, but they placed much of the responsibility for the problem on those in lower socioeconomic classes." Half of the medical student couples planned to have at least four children.

The active promotion of family planning and the teaching of family planning to medical students has been the subject of many papers (e.g. Baird, 1970) and several conferences in recent years (Josiah Macy, Jr. Foundation, 1966; Hyde and Bloch, et al, 1969). Many medical schools have recently initiated courses dealing with human sexuality and family planning

(Lief, 1971; Cade, 1971; Sarrel, 1968), although the pace of curriculum revision is deemed too slow by some (Rice, 1970).

While general data on attitudes toward population growth are scarce, individual opinions are common. Lief (1966) envisions a broad role for physicians in their counseling:

I submit that we cannot enlist the active support of every physician in the land unless we broaden the concept of family planning to include, in addition to contraception, such items as the timing of marriage, the timing of the first child, child spacing, the total number of children in the family, and most importantly the sexual and general marital adjustment of the parents.

Some physicians state the case even more strongly, (Pinto, 1970):

I am telling my patients in the office that well baby care is not enough; if they want a world fit to live in for their child or anybody else's child they must recognize that overpopulation begins at home and have no more than two children (preferably less) in this generation.

On a more subdued level, the American Medical Association House of Delegates, in their "Policy on Human Reproduction, Including Population Control," (Holden, 1967) stated:

- 1) An intelligent recognition of the problems that relate to human reproduction, including the need for population control, is more than a matter of responsible parenthood; it is a matter of responsible medical practice.
- 2) The medical profession should accept a major responsibility in matters related to human reproduction as they affect the total population and the individual family.
- 3) In discharging this responsibility, physicians must be prepared to provide counsel and guidance when the needs of their patients require it or refer patients to appropriate persons.
- 4) The AMA will take the responsibility for disseminating information on all phases of human reproduction, including sexual behavior, by whatever means are appropriate.

Although this policy avoided overt mention of abortion, recent AMA policy (AMA convention, 1970) states (Shelley, et al, 1971):

The Principles of Medical Ethics of the AMA do not prohibit a physician from performing an abortion that is performed in accordance with good medical practice, and under circumstances that do not violate the laws of the community in which he practices.

In trying to formulate ethical guidelines for population policy Margaret Mead suggests (Mead, 1969), "If we use as our criterion a proper

balance between adults and children, this is an ethic that applies to the whole world." The definition of this "proper balance" will undoubtedly be a source of spirited discussion for some time to come.

In summary, contraception, abortion, and sterilization are being looked upon with increasing favor by the general public and by the medical profession. Many regard population growth in the United States and its effects as serious problems. This study takes place in the context of much controversy and rapidly changing physician attitudes and practices.

Further literature will be cited as appropriate in the presentation of "Results" below.

II. Methods

Measurement of Attitudes: General Considerations

Several problems involved in any attempt to measure attitudes will be discussed in order to put this study into the context of the limits of sociologic research.

When surveying attitudes (Hollander, 1971), one must first define the "attitudinal space" of interest, that is the group of attitudes that is reasonable to study together. Secondly, within this "attitudinal space," it is most worthwhile to assess those attitudes which are related meaningfully to behavior. Third, the effect of the measurement procedure itself on the responses of individuals in the study merits evaluation. Finally, one must consider the "centrality or peripherality" of the attitudes measured relative to the life style and social roles of the respondents. Hollander notes that, "highly central attitudes are likely to be stable and considerably more important as bases for action than are peripheral attitudes." For example, the attitude of a gynecologist toward abortion would be more "central" to his role as a physician than a similar attitude held by an ophthalmologist; attitudes toward the dissemination of birth control information are more "central" to doctors who manage the birth control needs of their patients than to those who do not.

Although the attitudes expressed by a given group may be equally "central" to the roles of the individuals in the group (e.g. obstetricians' attitudes toward abortion), they may represent different levels of significance for the various members. As described by Kelman (1961), "agreement" with any given statement may represent "compliance," defined as "overt expression of an attitude as a social convention"; "identification" with the idea expressed, a greater change in the psychological field of a person; or finally, "internalization" of an idea, implying that the idea is a basic part of a person's value system.

Due to the broadly defined "attitudinal space" of this study, it was possible to touch only briefly upon some of the attitudes involved in each of the issues considered. The facets of each issue selected for study are the arbitrary choices of the investigator, and thus represent a subjective glimpse at the total "attitudinal space" of issues related to population growth. Secondly, no sure method exists for determining which of the attitudes surveyed are most meaningfully related to behavior, if any. Third, the effect of the attitude measurement procedure itself (the questionnaire) on responses of individuals is indeterminate in this study. Likewise, there is no objective way of determining how "central" or "peripheral" attitudes toward population growth are for the various respondents (especially medical students who did not indicate a specialty choice). Finally, one can only guess whether a given attitude represents "compliance", "identification," or "internalization" of the idea at issue.

In view of these methodological limitations, this study might best be appreciated as a momentary snapshot of a complex and rapidly changing scene.

The Questionnaire Method

Two commonly used methods of measuring attitudes involve using 1) a questionnaire administered in person by the researcher, and 2) a questionnaire answered and returned anonymously. Personal interaction introduces many variables in the use of the first method. Because it was felt that the effects of this interaction on the results might be different for each group of subjects interviewed, and would be difficult to assess even for a single group, given the investigator's lack of experience with the research interview technique, the latter method was chosen for this study. Use of the anonymously returned questionnaire also made it possible to survey a much larger sample of the population than would have been feasible with the personal interview technique.

Questionnaire Format

The three sections of the questionnaire (see Appendix) contained

- 1) 16 statements dealing with factual information, answered "true," "false," or "don't know,"
- 2) 44 attitude statements designed on the Likert model (Newcomb, 1965), answered with one of five choices, i.e. "strongly agree," "agree," "uncertain," "disagree," or "strongly disagree," and
- 3) biographical data

This final section asked for data such as the respondent's age, sex, race, professional position, marital status, number of children, religion and home background, as well as more personal questions about the respondent's sex education, expected number of children, ideas about family size in general, sexual orientation, and experience with birth control methods, sterilization, and abortion. A series of six questions dealt with the personal willingness of the respondent to utilize abortion and sterilization to limit his own family's size. Physicians were asked to estimate the percentage of Black patients, patients on welfare, and women of reproductive age in their practices.

Questions in the first two sections were designed to pertain to one of five categories:

- A. Perceptions of Population Growth,
- B. Factors Alleged to Contribute to Population Growth,
- C. Factors Tending to Decrease Population Growth,
- D. Possible Effects of Population Growth, and
- E. The Doctor's Role in the Population Issue.

Several questions in this study (indicated by an asterisk* in the Appendix) were drawn from the Sex Knowledge and Attitude Test designed by Dr. Harold Lief, et al, of the Department of Psychiatry, University of Pennsylvania in Philadelphia.

Distribution and Collection of the Questionnaire

Each questionnaire was accompanied by an answer sheet and a cover letter explaining the purpose of the study and promising confidential treatment of individual responses.

1) Medical students: In May, 1971, forms were placed in the mail-boxes of medical students in residence and mailed out to students entering Yale University School of Medicine in September, 1972. Replies were returned to boxes placed in the Sterling Hall of Medicine mail room or mailed directly to the investigator. All current and incoming students received questionnaires.

2) House Staff: Interns and residents training in programs administered by Yale University School of Medicine were sent questionnaires. Many questionnaires were distributed personally by the investigator in an attempt to get as high a response rate as possible from this very busy group. Replies were received by hospital and public mail.

3) Faculty: Members of the Yale University School of Epidemiology and Public Health, and School of Medicine faculty in the medicine, surgery, pediatrics, obstetrics and gynecology, and psychiatry departments at the level of professor, associate professor, and assistant professor received and returned questionnaires in similar manner.

4) Community physicians: About 400 physicians are listed in the American Medical Directory as being in private practice in the city of New Haven. Every fourth name in the alphabetical list was chosen to comprise a sample of 100 physicians for this study. Questionnaires were sent and returned by mail.

Data Analysis

The "Data-Text" computer program, designed for social science research by David J. Armor and Arthur S. Couch at the Harvard Computer Center was used on the DCS 7094 system at the Yale Computer Center. The patient and frequent assistance of the Yale Computer Center staff, especially Mr. Edward O'Neill and Mrs. Terry O'Connor, was invaluable,

Statistical Techniques

Summary statistics (means, standard deviations, frequencies, etc.,) were first computed for all respondents and for each group of respondents (students, house staff, faculty, and community physicians) taken separately. Differences observed between the responses of any two groups were tested for statistical significance using the Welch modification* (Welch, 1947) of the Student's T-Test. The technique of one-way analysis of variance, described in all elementary statistics texts, was used to evaluate the statistical significance of any trends seen in the mean responses of three or more groups to a given question.

Factor Analysis

Use of "factor analysis" (Rozeboom, 1966) was attempted as a convenient method of summarizing the data. This statistical technique mathematically manipulates a correlation matrix (a table of Pearson product moment correlation coefficients, r , for all possible pairings of the variables) to reveal clusters of variables which are all highly correlated with each other and less well correlated to all other variables. Each such cluster is called a "factor." Ideally, a certain limited number of factors are found which account for the majority of the spectrum of attitudes expressed in the data. If this is possible, it is then reasonable to calculate a "factor score" for each respondent for each of these factors, and then to compare the mean factor scores for various groups of respondents. Each group's overall attitude toward the issues contained in each factor can thus be evaluated.

The Data-Text program was used to derive several such factors from the 44 attitude questions in this study, using the "principal components" method of factor extraction. The results grouped clearly into what appeared to be "population," "abortion - birth control," and "race - poverty" factors. A less distinct "doctor's role" factor also emerged.

* The Welch technique adapts the T-Test for cases in which data from the two compared groups have different variances.

Because the factors were not completely uncorrelated with each other (the underlying premise of the principle components method), each factor was modified to some degree by the variables belonging to other factors. Due to this lack of clarity, the mean factor scores for the various groups of respondents conveyed little information, and therefore will not be reported here.

The factor analysis was useful, however, in pointing out which variables measured sentiment about the issues of population, birth control, etc., most directly. Questions thus selected from each of the five sections (A through E) outlined above were used for comparison with results from other sections and biographical data.

Contingency Tables

Throughout the "Results," such comparisons of results from two questions will frequently be made using contingency tables. Each such table will have the following format:

Table N.

Question A

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
--	--------------	------------------	-----------------

Question B Agree: Y

Uncertain:

Disagree: Z

A number of respondents, Y, agree with both questions A and B, while Z respondents disagree with both questions.

Correlation Coefficients

When responses to two questions show the association diagramed above they are said to be highly correlated, the strength of this association being quantitatively described by a correlation coefficient. The most commonly used coefficient, the Pearson product moment correlation coefficient, r , yields the best results (highest correlations) when all

possible real numbers within the defined range of answers can occur in the data. (For example, if answers may range from 1 through 5, values such as 1.5, 3.3, etc., could occur.) Since in this study one could only answer the attitude questions with one of five choices (numbered with the integers 1 or 2 or...5 for statistical analysis), a more useful correlation coefficient is that defined by Goodman and Kruskal (1954), the "Gamma statistic," where:

$$\text{Gamma} = \frac{S - D}{S + D} \quad \text{In the case of this study,}$$

S = the number of respondents giving the same answer (e.g. "agree") to the two questions being correlated, and

D = the number of respondents giving different answers to the two questions being correlated.

This statistic may vary from -1 (perfect negative correlation) through zero (no association) to +1 (perfect positive correlation), in identical manner to the more familiar Pearson product moment correlation coefficient, r. The Gamma statistic will be cited in "Results" where appropriate.

The Response Scale: Inherent Biases.

As described above, attitude questions could be answered by one of five choices, ranging from "strongly agree" to "strongly disagree". Since it cannot be assume a priori that the alternative answers are considered by all respondents* to be equidistant from each other (e.g. that there are equal differences in attitude between "uncertain," "agree" and "strongly agree"), a 1 to 3 scale (agree = 1, uncertain = 2, disagree = 3) was used for calculation of T-Tests and one-way analyses of variance. Exceptions to this general rule are noted individually in "Results."

* Medical students tended to choose the "strongly" alternatives more frequently than other groups. Whether this represents a true difference in intensity of attitude or is merely part of the "response set" (Newcomb, 1965) which students had to the format of the questions cannot be determined.

III. Results.

Of the 1142 questionnaires sent out, 601 (52.6%) were returned.

Table 2. Questionnaire Return Rates by Respondent Group.

	<u>Returned</u>	<u>Distributed</u>	<u>Percent Returned</u>
Incoming Student	58	97	59.7
Students, years 1-4	194	361	53.7
House Staff	145	294	49.3
Faculty	170	290	58.6
Community Physicians	34	100	34.0
Totals:	601	1142	52.6

The highest rates of return were among the incoming medical students and the faculty.

Discussion of results will follow the pattern used in the design of the questionnaire as outlined in "Methods" above, that is,

- A. Biographical data,
- B. Perceptions of Population Growth,
- C. Factors Alleged to Contribute to Population Growth,
- D. Factors Tending to Decrease Population Growth,
- E. Possible Effects of Population Growth, and
- F. The Doctor's Role in the Population Issue.

In sections B through F, responses to questions in each section will be discussed first, followed by comparison to other sections or to biographical data. Questions were selected for closer analysis and comparison on the basis of the factor analysis results and in view of trends seen on examining the responses of the major groups of respondents (medical students, house staff, faculty, and community physicians.)

A. Biographical Characteristics of the Respondents.

1. Age

The age structure of the sample is as follows:

Table 3. Age Structure of the Respondent Groups.

	<u>Mean age, years</u>	<u>Standard deviation, years</u>
Incoming students	22.8	3.35
Students, years 1-4	23.9	1.95
House Staff	29.6	3.80
Faculty	40.7	8.15
Community physicians	52.3	9.90

Faculty and community physician groups were quite heterogeneous with respect to age.

2. Sex

The vast majority of respondents were male (91.8%), females being equally divided among the five groups listed above. The "incoming students" group, however, was 13.8% female.

3. Race

About 96% of the sample was white, with the 12 Black respondents equally divided between incoming students and students currently in years one through four of medical school. The 14 persons indicating their race to be "other" than white or Black were spread among the house staff, students, and faculty.

4. Specialty

A few students and almost all of the house staff, faculty, and community physicians indicated their specialty:

Table 4. Specialty.

	Gen.				Ob.-		Pub.		<u>Total</u>
	<u>Prac.</u>	<u>Med.</u>	<u>Surg.</u>	<u>Pediat.</u>	<u>Gyn.</u>	<u>Psych.</u>	<u>H.</u>		
Incoming Students	1	1	3	1				2	8
Student, years 1-4	2	16	8	3	1	6			36
House Staff		30	46	16	7	46			145
Faculty		42	19	22	7	29	28	147	
Community physicians	3	9	5	2	4	3		26	
Total:	6	98	81	44	19	84	30	362	

5. Marital Status

Less than 10% of the house staff, faculty, and community physicians

were single, while 72.5% of the incoming students and 54.9% of the students in years one through four were single.

6. Religion

Respondents described their religion as follows:

Table 5. Religion.

	<u>Number</u>	<u>Percent</u>
Jewish	214	36.1
Catholic	71	12.0
Protestant	150	25.3
None	136	22.9
Other	22	3.7
Totals:	<u>593</u>	<u>100.0</u>

7. Parents' Jobs

The fathers of about 47% of the sample were either doctors, lawyers, clergymen, teachers, or "other professionals." Mothers of those students and doctors in the medical center were more often employed (57%) than mothers of community physicians (28%).

8. Family Size

Responses to a cluster of questions dealing with family size varied with religion:

Table 6. Family Size Information: Variation with Respondents' Religion.

	<u>Jews</u>	<u>Catholics</u>	<u>Protestants</u>	<u>None/Other</u>
How many children were in the home you grew up in (including yourself)?	<u>Mean:</u> 2.34	3.30	2.83	2.84
Total number of children you expect to have.	<u>Mean:</u> 2.38	3.02	2.45	2.33
<u>Haven't thought about it:</u>	7%	14%	2%	8%
What do you feel is the ideal number of children for the average American family?	<u>Mean:</u> 2.11	2.37	2.20	2.00
<u>Haven't thought about it:</u>	10%	14%	11%	15%

Catholics came from larger homes and expected to have larger families than did adherents to other religions. When broken down by professional status (students, house staff, etc.), it appears that younger respondents expect to have smaller families than their elders:

Table 7. Expected Family Size: Variation with Respondents' Professional Status.

	<u>Incoming Students</u>	<u>House Students</u>	<u>House Staff</u>	<u>Community Faculty</u>	<u>Community Physicians</u>
Total number of children you expect to have: <u>Mean</u> :	2.30	2.33	2.49	2.68	2.79
<u>Haven't thought about it</u> :	20%	12%	4%	1%	0%

Students and house staff "expect" to have fewer children than were present in their childhood homes, but only the medical students "expect" to have a number of children not significantly different from that which they considered "ideal for the average American family." Since students and house staff are just beginning to have their families, however, one cannot predict whether this "expect(ed)" number will actually describe their families at completion of childbearing.

Students came from homes of roughly equal in size to those of older respondents. For the unmarried members of the sample (mostly students), these responses presumably represent half of the input into what will often be bilateral decisions.

9. Adoption Plans

Younger members of the sample expected to utilize adoption more than older respondents:

Table 8. Expected Use of Adoption. (Numbers are percents of each respondent group.)

	<u>Medical Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
How many children do you plan to adopt?				
<u>None:</u>	37.4	58.1	85.1	93.3
<u>One:</u>	10.6	17.6	2.5	0.0
<u>Two or more:</u>	10.6	8.3	5.6	6.7
Haven't thought about it:	41.4	16.2	6.8	0.0

This trend was clearly statistically significant despite the large proportion of students (41%) who haven't given adoption any serious thought as yet. The data represent more the intentions of the two younger groups, and the actual behavior of the two older groups. These data will be discussed further in the section on adoption (Section D4).

10. Birth Control Experience

Since this study deals with attitudes toward birth control, the pattern of birth control use by the students and doctors is of interest.

Table 9. Percents of Respondent Groups Having Had Intercourse More Than Five Times Using the Listed Contraceptive Method.

	<u>Incoming Students</u>	<u>Students Years 1-4</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
Without contraception	27.3	36.3	79.3	86.3	100.0
Condom	41.1	51.6	64.8	76.7	76.6
Rhythm method	25.0	25.0	40.7	45.2	37.9
Intrauterine Device (IUD)	7.3	5.9	26.9	11.9	3.4
Pill	57.4	68.8	86.1	59.1	34.5
Diaphragm	29.1	23.0	76.5	76.5	48.4

Older respondents have more experience with the use of the condom, rhythm method, and diaphragm, as well as intercourse using no contraceptive*, while younger members of the same tend to rely more on the "pill." Use of the IUD is uncommon except among the house staff. This group is young

* Many of these instances of intercourse without contraception may have been for the intent of conceiving.

enough to be using contraception at a time when IUD's are becoming more popular, yet old enough for many (62%) to have had one or more children.

11. Sex Education

A set of three questions asked "What was the earliest sex education you had?" in the home, in church, and in school. Students and medical center doctors were taught at home at an earlier age (30% between the ages of 5 and 11) than community physicians. Among students, 35% received no sex education at all at home, a change from the corresponding figure of 59% for community physicians. Over 90% of all respondents received no sex education in church at any age.

A shift toward earlier sex education in school was perceptible:

Table 10. Sex Education in School. (Percents of each respondent group.)

	<u>Inc. Students</u>	<u>Students Years 1-4</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
Elementary grades	10.3	6.3	7.7	6.3	6.1
Grades 7-9	29.3	20.4	23.8	16.0	
Grades 10-12	17.3	24.1	22.4	17.9	3.0
College	8.6	13.6	11.2	9.9	24.2
Medical School		21.5	14.7	14.8	21.3
None	34.5	14.1	20.3	35.2	45.4

Over 20% of the current medical students received their first sex education while at medical school, and 14% report still not having received any at all. Over 34% of the incoming students have had no sex education, this figure being comparable to that for faculty and community physicians. In all of these questions, the definition of "sex education" was left to the individual respondent.

12. Sterilization and Abortion Experience

Twenty-two respondents have had vasectomies, mostly faculty members, while no respondent reported having had a tubal ligation. Twenty-nine have performed "many" abortions, while 25 have done "a few," both groups being evenly distributed among the house staff, faculty, and community physicians.

13. Types of Practice

The patient population served by house staff, faculty, and community physicians was estimated by the respondents as having varying proportions of Black and welfare patients:

Table 11. Proportions of Black and Welfare Patients Served by the House Staff, Faculty, and Community Physicians. (Percents of each group of respondents.)

About what proportion of your patients are Black?			About what proportion of your patients are on welfare?		
House Staff	Faculty	Community Physicians	House Staff	Faculty	Community Physicians
0-10%: 23.4	41.3	58.1	23.6	42.1	83.9
10-25%: 30.5	40.5	29.0	23.6	37.2	9.7
25-50%: 30.5	15.7	12.9	25.7	18.2	6.5
50-75%: 12.8	2.5		21.4	2.5	
75-100%: 2.8			5.7		

On the whole, house staff doctors estimate that they serve more welfare patients than Black patients (p less than .01), while community physicians estimate their Black patient group to be larger than their welfare clientele(p less than .01). House staff and faculty estimate that they serve many more Black and welfare patients than community physicians do. Responses to some questions in this study will be seen to vary with the estimates tabulated above.

Finally, responses to some questions were different for those physicians who "manage the contraceptive needs of (their) patients": only ten percent of the house staff and faculty responded "yes, as a rule", to this question, compared to 29% of the community physicians. An additional 34% of house staff and faculty, and six percent of community physicians prescribe contraceptives "on occasion."

B. Perceptions of Population Growth

Do doctors regard population growth in the United States as problematic? The seven questions in this section attempted to measure

knowledge of current demographic trends in the United States and reaction to these trends.

1. Demographic Trends

One attitude question touched upon population growth in developing countries:

Table 12. Overpopulation Outside the United States.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Overpopulation is currently a problem <u>only</u> in the development countries of Asia, Africa, and South America.	1.8%	0.7%	97.5%

Most respondents were aware of the current population growth in the United States:

Table 13. Demographic Trends in the United States. (Numbers are percents of the total sample.)

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
The decline in birth rate in the United States over the past ten years indicates that its population will stabilize within the next generation.	1.2	93.0	5.9
At its present rate of growth, the United States will add at least 80 million people to its population during the next 30 years.	66.5	4.9	28.6

These responses seem to indicate a general knowledge that the population of the United States as well as that of the rest of the world is indeed expanding, but only a rough quantitative understanding of this expansion. The 29% of all respondents who indicated that they "didn't know" if the United States population would expand by 80 million in the next 30 years might be registering a certain unwillingness to believe any projections or "forecasts" about population size, since these projections have proven to be quite inaccurate in the past.

In this light, it is of interest to consider some of the assumptions

--

and thoughts behind the U.S. Bureau of the Census projections. In the years just following World War II, demographers felt that there would be an increase in fertility of short duration, like that which followed World War I. Accordingly, P. K. Whelpton, et al, (1947) published a series of four possible growth curves (Series A,B,C, and D) which he felt the United States population might conceivably follow over the subsequent 50 years. The report stated, "The outlook after 1950 is for a continuation of the long-time decline in population growth, both in absolute numbers and rate. Moreover, there is a strong possibility that within a few decades the population will begin to decrease unless heavy immigration is resumed..." In 1955, Series AA was added to the chart of possible growth curves to reflect the sharp increases in fertility in the 1950's, and Series D was dropped as being unreasonably low.

The 1958 "forecast" accepted the current increases in fertility as a more significant trend, hence its Series A to D ranged from 291 million to 362 million as the estimated population size that would be reached by the year 2000. The lowest forecast was based on the assumption that the completed fertility rate would drop to 2.45 children per woman. These estimations were essentially repeated in 1967, when the Census Bureau issued "projections" (perhaps a less confident word than "forecasts") ranging from 283 to 361 million people by the year 2000. However, these projections disregarded the decline in fertility rate which began in 1958 and became steeper in the early 1960's.

By 1970 it was clear that this decline in fertility was a major trend: "Projections" were then issued which ranged from 266 million to 321 million people by the year 2000. Many observers inferred that a drastic decline in fertility had taken place over these three years (R.I.J. Med., 1970), when in reality, the 1970 projections reflected a trend that had been occurring for 12 years.

Thus the Census Bureau in the last 25 years has come full circle:

in 1947 it based its highest projection on current fertility rates, whereas, in 1967, it based the lowest projection on current fertility rates. This latter set of projections was obsolete by 1970, when the decline of fertility in the 1960's had persisted to the end of the decade.

A feeling of uncertainty about these rapidly changing demographic patterns may have caused many to respond "don't know" to the second question listed above (Table 13).

2. Overpopulation and Overcrowding in the United States

Four questions touched upon attitudes toward United States population size and the respondents' perception of overcrowding in the United States:

Table 14. Perceptions of Overpopulation and Overcrowding in the United States. (Percents of each respondent group.)

	<u>Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
The United States is presently overcrowded. <u>Agree:</u>	58.2	59.3	54.3	24.3
<u>Uncertain:</u>	11.8	5.5	11.4	15.1
<u>Disagree:</u>	30.0	35.2	34.3	60.6
Overpopulation is currently a problem in the United States. <u>Agree:</u>	69.1	66.2	62.1	42.3
<u>Uncertain:</u>	10.3	9.7	15.0	6.1
<u>Disagree:</u>	20.7	24.1	22.9	51.6
<u>All Groups</u>				
The United States will be over crowded in the next 30 years. <u>Agree:</u>	74.6			
<u>Uncertain:</u>	16.1			
<u>Disagree:</u>	9.3			
Overpopulation will become a problem in the United States during the next 30 years. <u>Agree:</u>	76.7			
<u>Uncertain:</u>	16.1			
<u>Disagree:</u>	7.2			

A majority of respondents felt that both overpopulation and overcrowding are problems at the present time; larger proportions expect them to be problematic within 30 years. Community doctors tended to disagree, however, with the homogeneous sentiment of those respondents from the medical center, (p less than .01).

The significantly greater (p less than .001 for all respondent groups) agreement seen in response to "overpopulation" at the present time compared to "overcrowding" can be traced to a small cluster (8.5%) who "disagreed" that the United States is presently overcrowded, but agreed that it is overpopulated:

Table 15. Comparison of Perceptions of Overcrowding and Overpopulation.
(Percents of total sample.)

		Overpopulation is currently a problem in the United States.		
		<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
The United States is presently overcrowded.	<u>Agree</u> :	52.5	1.0	2.1
Gamma = .842	<u>Uncertain</u> :	4.1	5.5	0.7
	<u>Disagree</u> :	8.5	4.5	21.0

The majority, then, either regard these to be similar problems or see them as being present simultaneously.

3. Religion

Only 43.7% of Catholics agreed that this country is presently overcrowded, this response being significantly less (p less than .05) than the remainder of respondents. A similar (statistically not significant) pattern was seen in the "overpopulation" question, with 55.7% of Catholics agreeing as opposed to 64.9% for all others.

4. Comparison with Other Sections

Since the question, "Overpopulation is currently a problem in the United States" contributed strongly to the "population" factor seen in

the factor analysis (see "Methods"), it will serve for comparison of "Perceptions of Population Growth" to other sections of the study and to biographical data.

a. "Ideal Family Size"

The question was asked, "What do you feel is the ideal number of children for the average American family?" Those choosing two or fewer children tended to affirm the presence of overpopulation more than those picking three or more children:

Table 16. Perceptions of Population by Varying "Ideal" Family Size.*^{1*}

<u>Percent agreeing to:</u>	<u>"Ideal number of children:"</u>	
	<u>Two or fewer</u>	<u>Three or more</u>
Overpopulation is currently a problem in the United States.	72.0	45.0

b. Factors Contributing to Population Growth

Selected questions from Section C, "Factors Alleged to Contribute to Population Growth," correlate well with the "overpopulation" question:

Table 17. "Perceptions of Overpopulation" vs. "Factors Alleged to Contribute to Population Growth."

<u>"Contribute" question:</u>	Compared with "overpopulation" question:		
	<u>Gamma</u>	<u>% "agree" to both questions</u>	<u>% "disagree" to "overpopulation," but "agree" to "contribute" question</u>
White, middle-class people are having more children than they should.	.513	47.6	9.0
Black people are having more children than they should.	.304	48.0	12.8
Poor people are having more children than they should.	.387	53.0	14.5
On the average, Black and poor families should have fewer children than they do now.	.216	55.7	18.4

* Tables using this format will appear throughout the "Results."

The majority felt that people of all socioeconomic levels are having too many children (see Section C). Because about 12 to 20% of respondents felt that the United States is not yet overpopulated but did feel that Black and poor people are having more children than they should, the correlation coefficients are lower for the last three questions listed above. Eight percent of the total sample agreed with the overpopulation questions, but did not feel that white, middle-class people are having more children than they should.

When these four questions are compared with, "Overpopulation will become a problem in the United States during the next 30 years," the Gamma statistics become higher, as more respondents agreed with the latter statement (76.7%: see Table 14).

c. Effects of Population Growth

The "overpopulation" question correlated well with several questions from Section E, "Possible Effects of Population Growth,":

Table 18. "Perceptions" vs. "Effects" of Population Growth.
(Percents of total sample.)

	Overpopulation is currently a problem in the United States.		
	Agree	Uncertain	Disagree
Advances in science and technology will be able to provide for the needs created by population growth in the United States.	Agree:	4.3	1.9
	Uncertain:	12.8	4.5
Gamma = -.578	Disagree:	48.5	9.0

This comparison reveals considerable skepticism about the ability of our society to cope with population expansion. Reactions to the statements, "There is enough unused land in the United States to accommodate future population growth," (Gamma = -.583), and "Population growth in the United States has adversely affected you," (Gamma = .664), also correlated strongly with a positive response to the "overpopulation" questions, as would be expected.

Response to the statement, "A major effect of population growth in the United States has been increased taxes to support poor people," correlated weakly with the "overpopulation" question ($\text{Gamma} = .146$). However, those agreeing to the "overpopulation" question more often agreed to the "tax" question.

d. Abortion

Agreement with the "overpopulation" question correlated moderately well with a receptive attitude toward abortion:

Table 19. "Perceptions of Population Growth and Abortion Attitudes." (Percents of total sample.)

Abortion during the first three months of pregnancy should be permitted when desired by the pregnant woman.	Overpopulation is currently a problem in the United States.		
	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
	<u>Agree:</u>	54.0	7.5
	<u>Uncertain:</u>	6.2	1.5
		<u>Disagree:</u>	5.1
		2.2	6.2

$\text{Gamma} = .310$

No such association of ideas was observed in comparing the "overpopulation" issue to the question, "Present birth control methods are sufficiently available to limit one's family size to one's desired number," ($\text{Gamma} = -.075$), in spite of the considerable diversity of opinion on the latter question.

e. Governmental Policy

Most of those responding affirmatively to the "overpopulation" question felt that the United States should stabilize its population size:

and the number of children in the family. This finding suggests that the relationship between family size and child abuse is not necessarily linear, but rather follows a U-shaped curve.

Finally, we found that the number of children in the family was negatively associated with the number of child abuse incidents. This finding suggests that families with more children experience less child abuse.

These findings are consistent with previous research (e.g., Follingstad & Johnson, 1987; Follingstad, Johnson, & Follingstad, 1990; Follingstad, Johnson, & Follingstad, 1991) and support the notion that family size is negatively associated with child abuse.

It is important to note that the results of this study are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In addition, the results are based on a cross-sectional design. Therefore, it is not possible to determine the direction of causality. It is possible that child abuse leads to family size, or that family size leads to child abuse. Further research is needed to determine the direction of causality.

Finally, the results are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In conclusion, the results of this study suggest that family size is negatively associated with child abuse. This finding is consistent with previous research and supports the notion that families with more children experience less child abuse.

It is important to note that the results are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In addition, the results are based on a cross-sectional design. Therefore, it is not possible to determine the direction of causality. It is possible that child abuse leads to family size, or that family size leads to child abuse. Further research is needed to determine the direction of causality.

Finally, the results are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In conclusion, the results of this study suggest that family size is negatively associated with child abuse. This finding is consistent with previous research and supports the notion that families with more children experience less child abuse.

It is important to note that the results are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In addition, the results are based on a cross-sectional design. Therefore, it is not possible to determine the direction of causality. It is possible that child abuse leads to family size, or that family size leads to child abuse. Further research is needed to determine the direction of causality.

Finally, the results are based on a nationally representative sample of mothers. Therefore, the findings can be generalized to all mothers in the United States. However, it is also important to note that the results are based on self-reports of child abuse. Therefore, the findings may be subject to social desirability bias.

In conclusion, the results of this study suggest that family size is negatively associated with child abuse. This finding is consistent with previous research and supports the notion that families with more children experience less child abuse.

Table 20. "Perceptions of Population Growth and Population Policy"
(Percents of total sample.)

The United States should try to reduce its population growth rate to zero.	Overpopulation is currently a problem in the United States.		
	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
	<u>Agree:</u> 47.0	4.3	9.8
	<u>Uncertain:</u> 6.7	4.0	3.4
	<u>Disagree:</u> 9.8	2.6	10.5

A small group (9.8%) who felt that overpopulation is a current problem nevertheless seemed to feel that the negative effects of a stable population size outweigh the present adverse effects of overpopulation. Alternatively, they may be fearing only sudden change to a stable population. A drop in the completed fertility rate from the present 2.45 children per woman to about 1.50 children per woman would be necessary for the United States population to stabilize within the next few years (ZPG National Reporter, Jan. 1972).

f. The Doctor's Role

Although a more conservative attitude was generally evident in the responses to questions in Section F, "The Doctor's Role in the Population Issue," there was some sentiment for affirmative action on the part of doctors:

Table 21. "Perceptions of Population Growth" vs. "The Doctor's Role in the Population Issue."

	Doctors should encourage their patients to have <u>no more than two</u> children.	Doctors' families should have <u>no more than two</u> children.
	<u>% Agree</u>	<u>% Agree</u>
Of those who <u>agree</u> to:		
"overpopulation" question:	63.0	67.0
Of those who <u>disagree</u> to:		
"overpopulation" question:	33.8	37.0

Agreement with the idea that the United States is currently overpopulated was associated with a willingness to encourage small families. In this study doctors and students did not distinguish between themselves and their patients in thinking about appropriate family size. These questions will be discussed further in Section F.

5. Summary

The majority of the sample agreed that both overpopulation and over-crowding are current problems, and about three-fourths expect them to be problems in the next thirty years. These attitudes were associated with: anticipation of a two-child family, the feeling that all segments of society are contributing to excess population growth, a receptive attitude toward abortion and population stabilization, skepticism with regard to the capacity of science and technology to cope with population growth, and sentiment in favor of active involvement of doctors in encouraging family limitation.

C. Some Alleged Contributing Factors to Population Growth

The literature, both popular and medical, is replete with discussions of racial and economic variables and their relation to fertility (Cleaver, 1968; Rainwater, 1960; Westoff, 1971, p. 234-278). The purpose of this section of ten questions was to examine the attitudes of doctors toward these factors in population growth.

In this context, it is especially difficult to assign questions to either a "knowledge" or "attitude" category since each question calls forth an admixture of both in complex fashion. Further, the definitions of such terms as "lower class," "unwanted pregnancy," "sexual drive," etc., may have quite different meanings to individuals in different stages of their medical careers and personal lives.

Results from this section should be viewed from a cautious perspective, keeping the above complexities in mind.

1. Fertility of Lower-Class People

The majority of the sample recognized that the bulk of population growth in the United States does not come from the poor and Black sections of the populace:

Table 22. Fertility of the Black and the Poor.

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
The majority of babies born in the United States are born to poor or Black parents.	13.6	77.0	9.4

Responses were homogeneous except for those of the community doctors, who answered "true" more (27.3%) than those from the medical center, (p less than .05). Only 12% of those who felt the "ideal number of children for the average American family" is two children or fewer answered "true" to this question, as opposed to 26% of those whose "ideal" number was three or more. Catholics were more likely to answer "true", (28.2%) than others, (p less than .01). No relationship was observed between answers to this question and the estimated proportion of Black and welfare patients in the respondents' practices.

2. "Unwanted" Pregnancies

Much discussion has centered about the issue of what proportion of births in this country are the result of "unwanted" pregnancies (Westoff, 1971, p. 288; Pohlman, 1965, 1966 p. 198-218; 1967). It is extraordinarily difficult to measure the prevalence of unwanted children, since the definition of "unwanted" may change from time to time, i.e. before, during, and after the pregnancy*. Some respondents in this study felt that if conception were completely controllable, population size would stabilize:

* In the National Fertility Study of 1965, 32% of those interviewed said their most recent pregnancy had been unwanted by one or both parents, while only 26% were completely successful in timing and limiting pregnancies (Westoff, 1971).

Table 23. Unwanted Pregnancy. (Percents of each group of respondents.)

	<u>Incoming Students</u>	<u>All Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
The prevention of all unwanted pregnancies would result in stabilization of the United States population size.	<u>True:</u> 5.2 <u>False:</u> 62.1 <u>Don't Know:</u> 32.8	13.9 56.2 29.9	13.8 60.7 25.5	15.8 49.1 35.2	33.3 21.2 21.2

A clear trend is apparent, as the percentage answering "true" increases with the age of the respondent; the two extremes are significantly different from those in the middle of the trend, (p less than .05). The community physicians may have more experience with unwanted, or at least poorly timed, pregnancy, both in their practices and personal lives. At the same time, younger respondents may have felt that any stabilization of the United States population size will stem from a reduction in the number of "wanted" births. The large number of "don't know" answers reflects the difficulty in defining "unwanted."

3. Factors in Fertility

The remainder of this section deals with some of the factors that may influence the number of both "wanted" and "unwanted" births, such as sexual drive, fertility, and the reproductive proclivities of various socioeconomic classes of people.

a. Sex Drive

Most of the sample denied a strong relationship between sex drive and fertility:

Table 24. Sex Drive and Fertility.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Sex drive and fertility are highly correlated.	7.5	8.0	84.5

Most also denied some commonly discussed ideas relating sex drive and family size limitation to social class:

Table 25. Class-Related Sex Drive and Family Limitation.

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
Lower socioeconomic class couples are generally not interested in limiting the number of children they have.	16.4	73.0	10.6
	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
The lower-class male has a higher "sex-drive" than others.	3.9	5.9	91.2
Lower-class women are typically quite sexually responsive.	10.4	27.2	62.5

It is interesting to note that the respondents, being large male, are much more "uncertain" about the sexual responsibility of the lower-class female than they claim to be about the "sex-drive" of the lower-class male. Rainwater (1960), Kinsey, et al, (1953), and Westoff (1971) present data supporting the accuracy of these responses.

6. Social Class

As shown above (Table 25), 73% denied any lack of interest in family limitation on the part of lower-class couples. In fact, the majority felt that all levels of society are having too many children:

Table 26. Overall Fertility Related to Social Class.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
White, middle class people are having more children than they should.	56.8	20.0	19.2
Black people are having more children than they should.	66.1	16.9	17.0
Poor people are having more children than they should.	74.1	13.5	12.4

Respondents clearly tended to feel more strongly about the reproduction of Black and poor families as compared to white (p less than .001 for all groups of respondents), but answers to the "Black" question by themselves were not significantly different from the "white, middle-class" question.

It would seem that financial status is regarded as more closely associated with high reproduction rates than race. The variation in the above data can be traced to relatively small groups of people, i.e. those who "disagree" to the "white, middle-class" question while answering "agree" to the "Black" (11.3%) and "poor" (12.2%) questions. Only 4.7% clearly distinguish between the "Black" and "poor" questions.

Table 27. Financial Status and Race as Factors in Fertility.
(Percents of total sample.)

	Poor people are having more children than they should.		
	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Black people are having more children than they should.	<u>Agree:</u> 62.9	1.8	1.2
	<u>Uncertain:</u> 6.7	9.2	1.2
Gamma = .856	<u>Disagree:</u> 4.7	2.3	9.9

The difficulties in quantitative measurement of this sort of attitude are illustrated by the results of the following question:

Table 28. Re-statement of Financial Status-Race as Factors in Fertility.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
On the average, Black and poor families should have fewer children than they do now.	82.7	10.1	7.2

This question, being slightly more mildly worded than those in Table 26, elicited more agreement (p less than .01 for all three comparisons in all groups of respondents). This comparison reinforces the idea that rough qualitative internal comparisons comprise the bulk of useful information to be derived from a study of this type.

All medical students taken together agreed more with the "white, middle-class" question when compared with other respondents (p less than .01). Incoming medical students tended to disagree with the "Black"

question more than other students (p less than .05), perhaps due to the higher number of Black students in that class. Because the numbers involved are small, however, responses were not analyzed further by race for fear of encroaching upon the anonymity promised when the questionnaire was distributed.

4. Concepts of Family Size

The association of ideas about family size and population growth can again be demonstrated:

Table 29. "Ideal" Family Size and Sources of Population Growth.

Percent agreeing to:	"Ideal number of children":		
	Two or fewer (N = 430)	Three or more (N = 93)	No opinion (N = 69)
White, middle class people are having more children than they should.	69.0	41.0*	34.8
Black people are having more children than they should.	70.5	64.5*	40.5**
Poor people are having more children than they should.	80.0	66.0	50.6**
On the average, Black and poor families should have fewer children than they do now.	87.5	76.5	63.8

* Difference between these responses significant at p less than .001.

** These responses were different from those choosing an "ideal" number, p less than .001.

The variation of response according to ideas about family size is seen best in the results of the "white, middle-class" question, which describes the background of most doctors and students in the sample. Since agreement with the remaining three questions would have less personal meaning to people of this background, it is not surprising that the dichotomy according to "ideal" number of children is less clear. Those with "no opinion" about "ideal number of children" were most reluctant to agree to any of these questions. The same pattern of significant differences appears when these questions are compared according to the "total number of children"

(respondents) expect to have."

5. Respondents Specialty

Agreement to the "white, middle-class" question was also associated with certain specialties, surgeons' opinions again being distinct.

Table 30. Surgeons' Attitudes Toward Sources of Population Growth.

Percent agreeing to:	Surgery	Other specialties
White, middle-class people are having more children than they should.	41.0*	65.7
Black people are having more children than they should.	71.0*,**	66.8
Poor people are having more children than they should.	78.0**	77.0

*,** Differences significant, p less than .001.

Surgeons agreed less than other specialists that white, middle-class people are having too many children, but agreed more that Blacks are having too many. Members of the house staff group also agreed less than other groups to the "white, middle-class" question (p less than .05), perhaps due to the slightly larger proportion of surgeons in that group.

6. Respondents Practice and Religion.

No clear relationship was observed between the above questions and religion, estimated proportion of Black patients, or whether or not the respondent managed birth control patients. Those who managed a higher estimated proportion of welfare patients, however, tended to agree more to the question dealing with "poor people."

7. Summary

About half to three-fourths of all respondents felt that members of all major segments of the United States population are having too many children, while denying that fertility is related to sexual drive or that sexual drive is related to race. About 10 to 15% felt that Black and poor people are having more children than they should, while white,

middle-class people are not. Surgeons made this distinction more often than other specialists. An even smaller group (less than 5%) clearly distinguished between "Black" and "poor".

D. Factors Tending to Decrease Population Growth

In attempting to estimate physicians attitudes toward, and knowledge about, various medical and social forces which have the potential to decrease population growth, questions were posed concerning five major areas:

1. Birth Control
2. Abortion
3. Sterilization
4. Adoption
5. Governmental Policy

Each area will be discussed separately, and the findings summarized at the end of each section.

1. Birth Control

The fourteen questions in this section are concerned with respondents' knowledge of the reliability of the various contraceptive methods, and their thoughts about how available birth control information and materials should be.

a. Knowledge of Contraceptives' Reliability

Six "knowledge" questions dealt with information in this area:

Table 31. Birth Control Knowledge.

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
The condom is one of the most reliable contraceptive devices.	31.4	67.8	0.8
The two most widely used forms of contraception around the world are condoms and withdrawal (coitus interruptus).	66.9	15.6	17.6
Douching is an effective method of contraception.	3.4	95.5	1.2
The rhythm method (when couples refrain from intercourse during the six to eight days midway between menstruations) when used properly is one of the most effective methods of preventing conception.	10.2	88.3	1.5
The diaphragm, when fitted and used properly, is as effective as the pill in preventing conception.	30.1	66.7	3.2
A mother can't become pregnant while nursing.	10.6	85.6	3.9

Although douching and the rhythm method were almost universally appreciated as not being among the most effective methods of contraception, considerable confidence in the condom was evident, as 31% felt it to be one of the most reliable devices. A similar portion of the sample felt the diaphragm to be as effective as "the pill" when used properly. Most were aware that nursing is not a sure defense against conception (Cronin, 1968).

Several interesting patterns emerge when the answers to some of these questions are analyzed by the professional status of the respondents:

Table 32. Birth Control "Knowledge" and Professional Status.

	<u>Incoming Students</u>	<u>House Students</u>	<u>House Staff</u>	<u>Community Faculty</u>	<u>Community Physicians</u>
Percent answering true to:					
The condom is one of the most reliable contraceptive devices.	32.8	25.9	25.5	37.7	54.5
The rhythm method (when couples refrain from intercourse during the six to eight days midway between menstruations) when used properly is one of the most effective methods of preventing conception.	8.6	4.6	16.7	10.2	18.2
The diaphragm, when fitted and used properly, is as effective as the pill in preventing conception.	27.6	16.4	28.3	43.7	54.5
A mother can't become pregnant while nursing.	12.1	13.0	12.4	7.2	3.0

Respondent groups tended to have the most confidence in the methods most often used by their generation (Donaldson, 1970; Westoff, 1970; Freedman, et al, 1959) and by themselves, as shown by the confidence of faculty and community physicians in the diaphragm and rhythm methods. The highest proportion of "don't know" responses to all questions came from the "incoming students" group, which is unremarkable since about a third reported receiving no formal sex education at all. The lesser awareness of the unreliability of nursing as contraception among medical students and house staff as compared to older groups was not anticipated. This again may reflect the personal and professional experiences of the older groups.

The higher degree of confidence in the condom on the part of both older physicians and incoming medical students may reflect the bias of personal experience, due to generational patterns of birth control use in the former case, and the tendency for unmarried students to rely on condoms in the latter. This is difficult to verify with the available

data, since questions on birth control in the biographical section did not distinguish between methods used presently and in the past.

Religious affiliation was associated with differences in contraceptive "knowledge" as Catholics tended to regard the rhythm method as effective (19.1%) more than all other groups (9.2%), ($p = .052$).

b. The Risk of Pregnancy

The risks of unprotected intercourse were most poorly appreciated by incoming students and older respondent groups:

Table 33. Risks of Unprotected Intercourse.

	Incoming Students	Students	House Staff	Faculty	Community Physicians
If a hundred couples have intercourse regularly without using contraception for one year, about 80 pregnancies will result.	True: 36.2	65.1	58.6	49.4	51.5
	False: 13.8	10.3	15.2	10.2	9.1
	Don't Know: 50.0	24.6	26.2	40.4	39.4

The large number (32.7%) responding "don't know" to this question may have been generally aware of the risk, but unsure of the exact statistics. The responses of the incoming students might be attributed again to lack of exposure to the information. One might speculate that the answers of the older groups might partly reflect a need to deny the risks of unprotected intercourse which complements their professed confidence in the birth control methods they used.

c. Availability of Contraception: In Theory

Given this reasonably accurate "knowledge" about birth control methods, what do physicians feel are the effects of making contraception available? To whom should it be available?

Almost all respondents denied any tendency for birth control information to increase "promiscuity":

Table 34. Birth Control and "Promiscuity".

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
The possession of birth control information is an incitement to promiscuity.	7.7	9.9	82.4

Of the 46 respondents who felt that birth control information is an incitement to promiscuity, 37 (83%) nevertheless agreed that contraceptive materials should be freely available to anyone capable of child-bearing (see Table 35, below), i.e. beyond puberty. It is possible, however, that this group defined "promiscuity" as premarital intercourse per se, and felt that the benefits of the availability of birth control (preventing unwanted pregnancy) outweigh the disadvantage of possibly encouraging this "promiscuity."

Overwhelming majorities felt that birth control information and materials should be available to anyone desiring them:

Table 35. Birth Control Policy.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Contraceptive materials should be made available to persons only if they are married or will be married in a short time.	1.8	1.0	97.2
Contraceptive information should be an integral part of sex and family life education for adolescents.	94.3	1.2	4.5
Contraceptive materials should be freely available on the individual's request to anyone capable of bearing children.	90.1	3.9	5.0

Over 90% of all respondents felt that contraception information and materials should be available to all people in the reproductive age group. The respondents who disagreed with the last two questions above were all among those who do not manage the birth control needs of their patients.

1. Religion

Catholics had slightly more conservative attitudes on the availability of birth control information:

Table 36. Birth Control Policy and Religion.

	Jews	Catholics	Protestants	None/Other
Contraceptive information should be an integral part of sex and family life education for adolescents.	<u>Agree:</u> 98.2 <u>Uncertain:</u> 0.9 <u>Disagree:</u> 0.9	77.5 4.3 18.2	93.4 1.3 5.3	98.0 0 2.0

Most doctors and students in the sample thus felt that birth control should be a routine part of good medical care.

d. Availability of Contraception: In Practice

Are present methods regarded as adequate and sufficiently available?

Table 37. Present Birth Control Availability and Adequacy.

	Agree	Uncertain	Disagree
Present birth control methods are sufficiently <u>available</u> to limit one's family size to one's desired number.	47.6	6.5	45.9
Present birth control methods are <u>adequate</u> to limit one's family size to one's desired number.	71.0	5.4	23.7
Abortion will someday replace contraception as the primary means of preventing unwanted children in the United States.	5.0	12.1	82.0

Although most felt that birth control methods are presently adequate, less than half felt they are available enough. Members of the house staff were more prone to agree that birth control methods are presently adequate (82%, p less than .001), and also tended to regard them as more available than other groups, (differences not statistically significant).

The question asking whether "abortion will someday replace contraception" as the basic method of birth control in the United States

requested more a prediction than an attitude. Although this has been the pattern in some eastern European countries where abortion became legal before contraception was widely available, most respondents in this study felt this would not be the case for the United States. This response was strong, in spite of the very receptive attitudes toward abortion seen in the sample in general (see Section D 2, below).

1. Specialty

Surgeons, pediatricians and obstetrician-gynecologists tended to feel more than other specialists that birth control methods were both adequate and sufficiently available (p less than .001 for both questions):

Table 38. Birth Control Availability and Specialty.

	<u>Med.</u>	<u>Surg.</u>	<u>Pediat.</u>	<u>Ob-Gyn.</u>	<u>Psych.</u>	<u>Pub. Health</u>
Present birth control methods are sufficiently <u>available</u> to limit one's family size to one's desired number.	45.0	61.0	54.4	63.0	45.5	37.7
Present birth control methods are <u>adequate</u> to limit one's family size to one's desired number.	77.5	84.0	75.0	84.0	71.0	63.5

The strongest agreement to both questions was seen among the obstetrician-gynecologists, who administer the greatest portion of birth control services in Yale-New Haven Hospital.

2. Family Size Concepts

Those who felt the "ideal number of children for the average American family" to be two or fewer agreed less to the question (Table 38) on birth control availability (44%) than those who felt that three or more children were ideal (62.4%, p less than .01).

3. Respondents' Practices and Religions

Responses in this last group of two questions (Table 38) were not associated with the estimated proportions of the subjects' patients

who are Black or on welfare; responses were also homogeneous among the religious denominations.

e. Summary

Over 90% of all respondents felt that birth control information and services should be a part of medical care available to all patients, including those just entering the age of reproductive capacity. Confidence in the reliability of various birth control methods corresponded more with personal experience than with the results of studies of contraceptive effectiveness (Tietze, 1970). About three-fourths felt that present birth control methods are adequate to limit one's family size to one's desired number, but less than half felt they are sufficiently available to accomplish this end.

2. Abortion

The attitudes of both the general public and medical profession toward abortion are undergoing rapid change in the midst of heated debate (Blake, 1971). Questions were asked about respondents' knowledge of the demographic effects of abortion, attitudes toward the availability of abortion, and personal willingness to use abortion as a method of limiting their own family's size.

a. Demographic Effects

One question dealt with "knowledge" about the demographic effects legalized abortion has had:

Table 39. Demographic Effects of Legal Abortion.

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
Abortion has proven to be an effective means of stabilizing population size in some countries.	49.7	14.4	35.9

Although half the sample were at least aware that abortion has been a factor in population stabilization in some countries (Davis, 1967;

Diggory, et al, 1970; Frederiksen, 1968), incoming students largely thought this statement to be false (53%). This may reflect either less awareness on their part of the role of abortion in countries outside the United States, or alternatively, a greater regard for the many other social and economic forces that play a role in retarding population growth.

b. Availability of Abortion

Most respondents were in favor of readily available abortion:

Table 40. Criteria for Abortion.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.	86.1	5.7	8.2
Abortion during the first three months of pregnancy should be permitted whenever desired by the pregnant woman.	77.3	9.2	13.5
Abortion between the third and fifth months of pregnancy should be permitted when desired by the pregnant woman.	50.9	22.4	26.7

While four-fifths of all respondents were in favor of abortion being part of available medical care, fewer felt this should apply to abortion done between the third and fifth months, apparently recognizing the higher incidence of adverse medical and psychological side-effects resulting from this procedure.

c. Is Abortion Murder?

When asked directly very few felt that abortion is murder:

Table 41.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Abortion is murder.	8.7	9.8	81.5

Half of those who felt that abortion is murder nevertheless felt that preservation of social and emotional welfare were sufficient indications for abortion and that abortion early in pregnancy should be available

when desired.

d. Response Variation:

1. Professional Status

The various groups within the sample were quite homogeneous in their responses to these questions:

Table 42. Criteria for Abortion: Professional Status of Respondents.

<u>Percent agreeing to:</u>	<u>Medical Students</u>	<u>House Staff</u>	<u>Community Faculty</u>	<u>Physicians</u>
Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.	87.0	84.1	88.5	75.8
Abortion during the first three months of pregnancy should be permitted whenever desired by the pregnant woman.	78.5	78.6	75.4	69.7

In contradistinction to the pattern seen in responses to many questions in previous sections, community physicians did not differ significantly from those in the medical center.

2. Family Size Concepts

Approval of abortion was more closely association with approval of small families in general:

Table 43. Criteria for Abortion: Ideas on Family Size.

<u>Percent agreeing to:</u>	<u>"Ideal number of children for the average American family:"</u>	
	<u>Two or fewer</u>	<u>Three or more</u>
Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.	90.5	79.5
Abortion during the first three months of pregnancy should be permitted whenever desired by the pregnant woman.	81.5	65.6

This association is less strong than that observed in the more directly population-oriented questions in previous sections, indicating that while

receptive attitudes toward abortion and population stabilization are frequently concurrent, they are seen as clearly separate issues by many people.

3. Specialty, Religion

Specialists in internal medicine, surgery, and pediatrics agreed less than other specialists to the first question in Table 43 above (p less than .01). The greatest variations in response are seen when religious affiliation is inspected:

Table 44. Attitudes Toward Abortion: Religion.

<u>Percent agreeing to:</u>	<u>Jews</u>	<u>Catholics</u>	<u>Protestants</u>	<u>None/Other</u>
Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.	95.8	44.3	83.4	93.6
Abortion during the first three months of pregnancy should be permitted whenever desired by the pregnant woman.	85.6	35.2	74.2	87.4
Abortion is murder.	4.2	35.7	5.9	6.3

Catholics differed from all other groups for all of the above questions (p less than .001 for all questions).

e. Personal Use of Abortion

In the final, "Biographical Data" section of the questionnaire, the question was asked, "After how many children would you be willing to have each of the following procedures performed in order to limit your family's size?... Abortion in the first three months of pregnancy." Although younger groups responded with significantly lower numbers (of children), it would seem that this question might raise different issues for the various groups answering the questionnaire, since they would be at different stages in planning their families. It might be more appropriate to group all those who would ever be willing to consider abortion to limit family size:

Table 45. Attitudes toward Abortion and Willingness to Undergo Abortion.

	Willing to undergo abortion to limit family size:	
	Yes	No
	N: 287	104
Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.	<u>Agree:</u> 96.2%	53.8%
	<u>Uncertain:</u> 2.4	12.5
	<u>Disagree:</u> 1.4	33.6

Almost half the sample was willing to use abortion to limit their own family at some point. Over half of those who would not consider abortion for themselves would still approve of it being available to others. Since the sample was largely made up of males, these respondents must be interpreted as their opinion in negotiating such a decision with their partner.

f. Summary

Over three-fourths of those doctors and medical students who returned the questionnaire favored policies that closely approximated "abortion on demand" without using the word "demand". Opinions varied more with specialty, religion, and concepts of family size than with the age of the respondent. Almost half of the respondents were willing to use abortion at some point in order to limit their family's size.

3. Sterilization

With sterilization (especially vasectomy) becoming a more commonly utilized contraceptive measure each year (Amer. Med. News, 28 Feb., 1972, p. 14; Boulware, 1967), physicians knowledge and attitudes about this method may be important variables affecting the extent of its use.

Most physicians and students in this sample denied the existence of some commonly discussed side-effects of sterilization (Brit. Med. J., 1970; Ferber, 1967; Laidlow, 1969; Stokes, 1965; Ziegler, 1966; Barnes, 1958; Black, 1968):

Table 46. Sterilization's Effect on "Sex Drive".

	<u>True</u>	<u>False</u>	<u>Don't Know</u>
Sterilization of the male by vasectomy usually results in diminished sexual performance or a chronic loss of sex drive.	0.5	96.5	3.0
Sterilization of the female by tubal ligation usually results in diminished sexual performance or a chronic loss of sex drive.	0.5	96.7	2.8

The vast majority were in favor of legal voluntary sterilization:

Table 47. Legalization of Sterilization.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Voluntary sterilization for contraceptive purposes should <u>not</u> be legalized.	3.5	3.0	92.5

Sterilization is in fact legal in all states except Utah (Overstreet, 1970b).

Summary

Sterilization was widely held to be innocuous from the standpoint of its effect on sexual drive and performance. Many students and physicians were reluctant to recommend it for their patients, however, as discussed in Section F, below.

4. Adoption

Adoption has been advocated in recent years as a means of expanding one's family without having more than two children. Since babies available for adoption are becoming more scarce, and since many of the problems involved in adoption are encountered by the practicing physician (Rothenberg, 1971), it is relevant to ask what doctors' attitudes are regarding this issue.

Two questions were asked in this area:

Table 48. Adoption Availability and Policy.

	<u>Medical students</u>	<u>House staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
It is generally easier to adopt now than it was two years ago.				
<u>True:</u>	23.7	18.1	17.5	24.2
<u>False:</u>	38.7	47.9	54.3	57.6
<u>Don't Know:</u>	37.6	34.0	28.3	18.2
Adoption should be used to increase family size if more than two children are desired.				
<u>Agree:</u>	68.3	62.0	56.9	39.4
<u>Uncertain:</u>	13.1	11.7	18.0	15.2
<u>Disagree:</u>	18.6	26.1	25.3	45.5

Younger members of the sample were less aware of the scarcity of available babies, but agreed more often (p less than .01) that adoption should be used to increase family size. The larger proportion of "don't know" responses from younger students and doctors may reflect lack of knowledge of adoption trends, but may also reflect the fact that the race of the available babies was not specified. White babies are less available for adoption than babies of other races.

a. Religion

Less receptive attitudes toward adoption for the purpose of expanding family size were seen among Catholics, but more Catholics than any other group planned to adopt:

Table 49. Adoption and Religion.

	<u>Jews</u>	<u>Catholics</u>	<u>Protestants</u>	<u>None/Other</u>
Adoption should be used to increase family size if more than two children are desired.				
Percent Agree:	58.9	42.3	64.9	71.5
Percent planning to adopt: (one or more children)	15.1	23.1	19.3	18.8

The variation seen among answers given by different religious groups to the first question is non-random (p less than .01).

6. Family Size Concepts

Receptive attitudes toward adoption for the purpose of family enlargement without producing more than two children were associated with approval of small families in general, as expected:

Table 50. Adoption Attitudes Concurrent with Family Size Attitudes.

Percent agreeing to:	Ideal number of children/family.		Total number of children "you expect to have."				
	≤ two	≥ three	p	≤ two	three	≥ four	p
Adoption should be used to increase family size if more than two children are desired.	69.8	46.2	.001	70.0	52.6	47.0	.05

Those agreeing with the above question tended to approve of stabilization of population size in the United States, as discussed in the following paragraphs. (Section D5).

c. Summary

Generally, most felt adoption should be used to increase family size beyond two children. This attitude was less common among Catholics. Those favoring smaller families as "ideal" were more often in favor of adoption.

5. Government Policy

Taxation for the purpose of encouraging small families and the establishment of population stabilization as national policy for the United States have both been discussed at length in the professional literature (Berelson, 1969; Ehrlich, 1968), as well as in the more widely distributed media.

a. Taxation and population stabilization

Two questions dealt with physicians' attitudes toward government

policy about population growth. Some variation was seen among respondents of different professional status:

Table 51. Population Policy Attitudes by Respondents' Professional Status.

	Medical students	House Staff	Community Faculty	Community Physicians
The United States income tax system should be revised to favor the two-child family.				
<u>Agree:</u>	57.3	54.5	58.4	59.4
<u>Uncertain:</u>	16.2	14.5	13.9	6.2
<u>Disagree:</u>	25.6	31.0	27.7	34.4
The United States should try to reduce its population growth rate to zero.				
<u>Agree:</u>	71.0 *	59.3	59.1	36.4 *
<u>Uncertain:</u>	13.5	11.7	14.5	27.3
<u>Disagree:</u>	15.5	29.0	26.5	36.3

* Different from the remainder of the sample, p less than .01.

Opinions about the taxation issue were homogeneous over different groups in spite of the clear differences in response to the second question. Students felt more strongly than community physicians that the United States' population size should be stabilized, but were less willing to be taxed as one means of bringing about this change.

b. Family Size Concepts

Responses to the above questions followed previously encountered trends, with those favoring smaller families being receptive to the concept of stable population size and to taxation as a means to that end.

c. Religion

Attitudes toward these issues again varied with the religion of the respondent:

Table 52. Association of Attitudes toward Population Policy with Religious Affiliation.

<u>Percent agreeing to:</u>	<u>Catholics</u>	<u>All other groups</u>	<u>p</u>
The United States income tax system should be revised to favor the two-child family.	30.0	60.5	.001
The United States should try to reduce its population growth rate to zero.	45.7	65.0	.001

Catholics agreed to both propositions to a lesser degree than all other religious categories taken together. This separation between Catholics and all others is almost as wide as that seen in the questions dealing with abortion.

d. Summary

Over half the sample were in favor of reducing the population growth rate in the United States to zero, but slightly fewer felt that taxation would be used as a means to accomplish this. Religion and ideas about family size were again closely related to opinions on these issues.

E. Possible Effects of Population Growth

Although discussion of population growth in other countries seems most often to center about problems of food supply, concern in the United States has often focused on environmental effects caused by population expansion within a technologically advanced society (Ng and Mudd, 1964; Ehrlich, 1968, 1971). A group of seven questions was designed to estimate physicians' and students' attitudes in this area. The issues of food and land supply, natural resources, pollution, and the effects of population growth on tax structure and quality of life in general were touched upon.

1. Resources

A large majority of the respondents felt that food, land, and natural resource supplies will become inadequate in the United States:

Table 53. Land, Natural Resources, and Food Supply in the United States.

	<u>Medical Center MDs and Students</u>	<u>Community Physicians</u>
There is enough unused land in the United States to accommodate future population growth.		
<u>Agree:</u>	18.3	39.4
<u>Uncertain:</u>	11.7	9.1
<u>Disagree:</u>	70.0	51.5
	<u>All respondents</u>	
There are enough untapped natural resources available to the United States to provide for its present rate of population growth.	<u>Agree</u>	<u>Uncertain</u>
	10.1	22.1
		<u>Disagree</u>
		77.8
Food supply will become a problem in the United States as its population grows.	63.1	18.3
		18.6

The differences between community and medical center physicians in response to the first question is not quite statistically significant ($p = .06$), while a similar difference seen in the second question (Table 53) is significant (p less than .05). Students disagreed to the "land and natural resources" question and agreed to the "food" question more than other respondents (p less than .05 for all comparisons). The strength of response to these questions may be due in part to the absence of a precise specification of time in the questions, while differences between respondent groups might be attributed to varying definitions of "future."

2. Pollution

A general statement asserting a strong relationship between population growth and pollution elicited strong agreement from all groups in the sample:

Table 54. Population Growth and Pollution.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
A major effect of population growth in the United States is increased environmental pollution.	88.3	3.9	7.8

3. Science and Technology

Most were skeptical of our technological ability to cope with continued population expansion:

Table 55. Science and Technology's Ability to Cope with Population Growth.

	<u>Medical Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
Advances in science and technology will be able to provide for needs created by population growth in the United States.	Agree: 13.8	10.5	13.8	33.4
	Uncertain: 20.2	32.2	23.5	15.1
	Disagree: 66.0	57.3	62.6	51.5

Community physicians were observed to be slightly more optimistic than medical center respondents, but the majority still exhibited uncertainty or disagreement with the statement. Catholics disagreed with this statement less (46.4%) than people of all other faiths (64.6%) (p less than .01).

4. Effects on Individuals

In a broad sense, most agreed that adverse effects of population growth had begun to appear in their lives:

Table 56. Personal Effects of Population Growth.

	<u>House Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
Population growth in the United States has adversely affected you.	Agree: 59.1	55.9	53.1	30.3
	Uncertain: 19.1	16.6	19.3	18.2
	Disagree: 21.8	27.6	27.9	51.5

Students agreed more strongly than other groups (p less than .05), while community physicians generally disagreed. Again, the vagueness of the question may be reflected in the large proportion of "uncertain" answers, 18.5% of the whole sample. Catholics agreed less than people of other faiths; surgeons agreed less than other specialists (p less than .05).

5. Population Growth and Welfare Costs

One question attempted to detect any association of recent increases in welfare costs to ideas about population growth:

Table 57. Population Growth and Taxes.

	<u>Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
A major effect of population growth in the United States has been increased taxes to support poor people.				
<u>Agree:</u>	29.8	42.1	24.0	39.4
<u>Uncertain:</u>	21.4	15.9	21.0	12.1
<u>Disagree:</u>	48.8	42.0	55.1	48.5

Although the largest portion of the total sample disagreed with this statement, again there is a great deal of uncertainty (19.4%). No relationship was observed between response to this question and the estimated proportion of welfare patients a doctor saw, but the house staff nevertheless stand out as agreeing more than other medical center groups.

6. Relationship of Responses to Family Size Concepts

Continuing the pattern established in Sections B, C, and D above, responses to questions in this section showed a clear dichotomy according to ideas about family size:

Table 58. Family Size Concepts and Effects of Population Growth.

Percent <u>disagreeing</u> to:	'Ideal number of children for the average American family.'		
	<u>Two or fewer</u> (N = 430)	<u>Three or more</u> (N = 92)	p less than
There is enough unused land in the United States to accommodate future population growth.	76.3	46.6	.001
There are enough untapped natural resources available to the United States for its present rate of population growth.	75.2	47.3	.001
Advances in science and technology will be able to provide for the needs created by population growth in the United States.	69.3	42.4	.001

Similar answers were given to the question, "Population growth in the United States has adversely affected you," with agreement coinciding more often with a "two or fewer" ideal family size.

7. Summary

The majority of students and doctors in this sample see a strain being placed on natural resource supplies and environmental quality, and an adverse effect on their personal lives by population increases; most are skeptical of the abilities of technological advances to cope with the problems created by an expanding population. Responses in this section again varied as would be expected with both "ideal" and "total expected" family size.

F. The Doctor's Role in the Population Issue

As discussed in preceding sections, most of the respondents to the questionnaire felt that growth of all socioeconomic segments of the United States population is becoming excessive, that it is adversely affecting environmental quality, placing a strain on supplies of natural resources,

and generally exerting a negative influence on daily life. Overwhelming majorities favored liberal birth control and abortion policies, and over half the respondents felt that the United States should try to stabilize its population size.

Given these attitudes, how ought a doctor approach the issue of family size limitation in his practice? Ten questions in this study dealt with some of the issues involved in the doctor-patient relationship.

1. Discussion of Population Growth with Patients

The bulk of the sample felt that population size is a legitimate topic for discussion in the context of providing medical care:

Table 59. Discussion of Population with Patients.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Discussion of family size as it affects population size is <u>not</u> appropriate in the context of the doctor-patient relationship.	10.4	5.4	84.3

2. Prescription of Birth Control

According to a similar portion of the sample, provision of birth control should not be relegated entirely to obstetrician-gynecologists:

Table 60. Prescription of Birth Control.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Prescription of contraceptives should remain entirely within the domain of obstetrics and gynecologists.	12.1	5.7	82.3

This question does not measure the affirmative side of the issue, i.e. to what extent the prescription of birth control should be included in the practice of specialties other than obstetrics and gynecology. Community physicians and medical students agreed with the above statement more than did the house staff and faculty groups. This may reflect a lack of experience of medical students with clinical situations in which the

prescription of a birth control method is appropriate.

3. Patients Financial Status

During the peak of the post-World War II "baby boom", it was commonly felt that people should have as many children as their financial status could provide for. The doctors in the current study felt, however, that this should not be encouraged:

Table 61. Family Size Counseling: Consideration of Patient's Financial Status.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Doctors should encourage their patients to have as many children as they can afford.	3.7	5.5	90.8

4. Patients' Social Class and Intelligence

In providing birth control services for their patients, most respondents felt all levels of society should be dealt with on an equal basis:

Table 62. Family Size Counseling: Patient's Social Class and Intelligence.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Doctors should concentrate their family size counseling efforts on the poorer population.	13.6	7.4	79.0
Doctors should encourage their intelligent patients to have more than two children.	5.2	8.9	85.9

Using the original answering scale of one through five (for "agree" to "disagree"), community doctors agreed to both of the above questions more than the medical center groups, (p less than .05 for both questions). Surgeons agreed (23.2%) to the second question more than other specialists, (p less than .05).

5. Sterilization

In recent years sterilization has become increasingly popular; about

750,000 vasectomies were performed in the United States during 1970 (Amer. Med. News, 1972). Almost all respondents felt that doctors should be knowledgeable about sterilization and most felt that initiation of a discussion of the subject was a physician's prerogative:

Table 63. Discussion of Sterilization.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
All doctors should be able to advise patients about sterilization procedures.	93.5	21.5	4.0
Discussion of sterilization should be initiated by the patient, not the doctor.	17.9	13.9	68.2

Many physicians and medical students were reluctant, however, to actively promote the use of sterilization as a contraceptive measure:

Table 64. Encouragement of Sterilization.

	<u>Medical Students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Community Physicians</u>
Doctors should encourage sterilization either by tubal ligation or vasectomy after a couple has their desired number of children.	<u>Agree:</u> 38.6	34.5	39.7	66.6
	<u>Uncertain:</u> 29.2	26.8	19.9	9.1
	<u>Disagree:</u> 32.2	38.7	40.3	24.3

The homogeneous response from those within the medical center was one of caution, with slightly over one third agreeing, but community physicians favored the use of sterilization much more frequently. (The difference is not quite statistically significant due to the small number of community physicians involved and the broad spectrum of opinion in the entire sample as a whole.) One might speculate that this posture of the community physicians is related to their greater experience with contraceptive inconvenience and failure, since their average age is ten years more than that of the faculty. Alternatively, the difference could be related to

sentiments about encouraging sterilization for different social classes (in view of the result discussed in Section C) since the social class of the patients in the above question was not specified. This enthusiasm for sterilization among the community physicians is also remarkable in view of their professed confidence in the effectiveness of the diaphragm and condom , the methods most frequently used by their generation.

6. Personal Willingness to be Sterilized

In the biographical data section of the questionnaire, subjects were asked, "After how many children would you be willing to have the following procedure performed in order to limit your family's size?...Irreversible female sterilization by vasectomy." A parallel question asked about "irreversible male sterilization by vasectomy." For reasons discussed above in regard to similar questions on abortion, all those who were ever willing to undergo sterilization were grouped.

Table 65. Sterilization: For the Doctor and for the Patient.

Percent willing to undergo:

	Irreversible Female Sterilization		Irreversible Male Sterilization	
	Yes	No	Yes	No
	N = 280	99	330	142
Doctors should encourage sterilization either by tubal ligation or vasectomy after a couple has their desired number of children.	<u>Agree:</u> 50.0	17.2	48.9	17.6
	<u>Uncertain:</u> 23.2	22.2	26.5	21.1
	<u>Disagree:</u> 26.8	60.6	24.6	61.3

About half of this largely male sample was willing to consider male or female sterilization to limit their families. Reluctance to undergo sterilization was closely associated with reticence in promoting sterilization for patients. Catholics approved of sterilization, both for themselves and for their patients, less than members of other religions.

7. Approach to the Patient

If birth control, sterilization, and abortion are all considered by many to be appropriate parts of the physician's armamentarium, and discussion of family size is appropriate in the doctor-patient relationship, what overall attitudes toward family size are brought into this discussion?:

Table 66. Family Size Limitation: For Doctors and Their Patients.

	<u>Agree</u>	<u>Uncertain</u>	<u>Disagree</u>
Doctors should encourage their patients to have <u>no</u> more than two children.	54.0	19.4	26.7
Doctors families should have <u>no</u> more than two children on the average.	55.9	13.1	31.0

Over half of the doctors and students answering the questionnaire felt that the promotion of family limitation to two or fewer children is desirable. Further, an equal proportion felt that doctors themselves should follow this same small-family guideline. (Responses to these two questions correlated highly: Gamma = .754.) This is a broad qualitative result, and does not measure the strength of this "encouragement." It also does not delve into the many subtleties of patient interviewing which may affect whether or not a physician may feel such encouragement to be appropriate in any given situation.

Answers to these last two questions (Table 66) varied with religion, as did the responses to the question on the discussion of sterilization with patients:

Table 67. Sterilization and Family Size Discussion: Religious Influences.

	<u>Catholics</u>	<u>Non-Catholics</u>
Discussion of sterilization should be initiated by the patient, not the doctor.	49.3% Disagree	70.6% Disagree
Doctors should encourage their patients to have <u>no</u> more than two children.	35.6% Agree	56.3% Agree
Doctors families should have <u>no</u> more than two children on the average.	38.6% Agree	58.2% Agree

Catholics were frequently more reluctant to limit their own families or to encourage family size limitation.

Respondents who listed larger numbers of children as both the "ideal" for the average American family and their own "expected" number of children were more reluctant to promote small families.

Table 68. Personal vs. Professional Attitudes toward Family Size.

<u>Percent agreeing to:</u>	<u>"Ideal number of children for the average American family."</u>		
	<u>Two or fewer</u>	<u>Three or more</u>	<u>p less than</u>
Doctors should encourage their patients to have <u>no</u> more than two children.	66.0	28.0	.001
Doctors families should have <u>no</u> more than two children on the average.	68.8	28.3	.001

This clear trend was present despite the homogeneity of favored "ideal" family size with respect to the age of the respondents. Questions in this section dealing with sterilization and concentration of "family size counseling efforts on the poorer population" showed similar, but less clear, response trends.

8. Specialty

Responses to some questions in this group varied with specialty:

Table 69. Variation of Attitudes toward Sterilization Counseling and Doctors' by Specialty of the Respondent.

	<u>Med.</u>	<u>Surg.</u>	<u>Pediat.</u>	<u>Ob-Gyn.</u>	<u>Psych.</u>	<u>Pub.H.</u>
N =	97	82	44	19	89	30
<u>Percent agreeing to:</u>						
Doctors should encourage sterilization either by tubal ligation or vasectomy after a couple has their desired number of children	29.0	40.0	38.5	63.0	35.8	50.0
Doctors' families should have no more than two children on the average.	42.3	42.7	50.0	84.2	61.0	72.5

The variation in answers given by different specialties to these questions is non-random (p less than .05 and .01 respectively). Obstetrician-gynecologists and public health physicians were more receptive to sterilization, while psychiatrists and internists were least enthusiastic.

Internists and surgeons were also at the opposite end of the range of agreement from obstetrician-gynecologists, psychiatrists and public health personnel with respect to the question of limiting doctors' own families to two or fewer children.

9. Summary

Large majorities of respondents favored encouragement of family size limitation for all socioeconomic levels of society, but response was less affirmative than that seen in the above section dealing with the availability of birth control and abortion. Less than half felt sterilization should be encouraged after a patient's desired family size is reached, while about half the sample was willing to consider male or female sterilization at some point in order to limit their own families. Respondents did not distinguish between themselves and their patients in terms of family size limitation.

IV. Summary

This study of the attitudes of 601 Yale medical students, house officers, faculty, and New Haven community physicians toward population growth in the United States and the issues of contraception, abortion, sterilization, and adoption has yielded the following results:

- A. A majority of the sample agreed that overpopulation (64.9%) and overcrowding (55.5%) are problems in the United States or will become problems (75%) in the future. These attitudes were associated with:
 1. the feeling that all segments of society are contributing to population growth (see B below),
 2. a receptive attitude toward abortion and population stabilization,
 3. a strong feeling of skepticism with regard to the capacity of science and technology to cope with population growth, and
 4. sentiment in favor of the active involvement of doctors in encouraging family limitation.
- B. Most respondents felt that white, middle-class people (56.8%), Black people (66.1%) and poor people (74.1%) are "having more children than they should."
 1. About 10 to 15% felt that Black and poor people are having more than they should, while white, middle-class people are not.
 2. Those who thought two or fewer children to be "ideal for the average American family" were more likely to agree to the "white, middle-class" version of this question than those who regarded three or more children as "ideal." This difference was considerably less distinct in response to the "Black" and "poor" versions of the question.
 3. Surgeons agreed to the "white, middle-class" version less than

other specialists, but members of all specialties agreed to the "Black" and "poor" questions equally.

- C. Over 90% of all respondents felt that birth control information and materials should be part of medical care available to all patients, including those just entering the age of reproductive capacity.
1. Confidence in the reliability of various birth control devices corresponded more with personal experience than with the results of studies of use-effectiveness.
 2. Seventy-one percent (71%) of respondents thought that present birth control methods are "adequate to limit one's family size to one's desired number," while only 47.6% felt they were "available" enough to accomplish this goal.
 3. Surgeons, pediatricians, and especially obstetrician-gynecologists felt more strongly than other specialists that present methods were both adequate and available enough.
- D. A large majority (86.1%) felt that preservation of social and emotional well-being is sufficient reason for performing abortion and 77.3% felt abortion in the first trimester of pregnancy should be permitted whenever desired by the pregnant woman.
1. Internists, surgeons, and pediatricians approved of abortion less than other specialists.
 2. Receptive attitudes toward abortion and population stabilization were often concurrent, but a large group clearly saw them as separate issues.
 3. Almost half (47.4%) of the sample were willing to agree to abortion at some point in order to limit their family's size. (Respondents were 92% male.) In a recent survey of the general public, a similar proportion approved of abortion when the pregnancy was not wanted (Commission on Population Growth and the

American Future, 1972).

E. Sterilization was viewed as harmless to one's sexual drive by over 95% of respondents, and 92.5% felt voluntary sterilization should be legal.

1. Only about 40% of medical center respondents felt they should "encourage sterilization either by tubal ligation or vasectomy after a couple has their desired number of children," while 66.6% of community physicians approved of this approach.
2. Over 50% were willing to agree to sterilization (either male or female) at some point in order to limit their family's size.

F. Over 60% felt that "adoption should be used to increase family size if more than two children are desired."

G. About 62% thought the "United States should try to reduce its population growth rate to zero," and a similar proportion favored revision of the income tax system as one means of approaching that goal.

H. The majority of students and doctors in this sample see a strain being placed on natural resource supplies (77.8%), food supply (63.1%), land area (68%), and environmental quality (88.3%), and an adverse effect on their personal lives (56%) by population increases in the United States.

1. About 62% doubted that "science and technology will be able to provide for the needs created by population growth in the United States," while another 25% were uncertain.

I. Between 85 and 90% of respondents felt that:

1. discussion of population size is appropriate in the context of the doctor-patient relationship, and

2. doctors should not approach patients of varying financial and intelligence levels with different degrees of enthusiasm when discussing population issues.
- J. About 55% felt doctors should encourage their patients to have no more than two children; the same proportion felt doctors themselves should follow these same guidelines. This sentiment was less strong than that favoring abortion and birth control availability.
- K. Catholics, when compared to respondents of other religions:
1. were more likely to come from families with three or more children,
 2. were less convinced that overpopulation and overcrowding are problems in the United States,
 3. were more likely to feel that the majority of babies born in the U.S. are born to poor and Black parents (28% vs. 13%),
 4. were more likely to regard the rhythm method as effective (19% vs. 9%),
 5. were less likely to feel that contraception information should be available to adolescents (77% vs. 95%),
 6. were much less receptive to abortion for social and emotional indications (44% vs. 88%) or whenever desired by the pregnant woman during the first trimester of pregnancy (35% vs. 84%),
 7. planned to adopt more often (23% vs. 17%), but were less receptive to adoption for the purpose of expanding family size without procreating (42% vs. 65%),
 8. were less in favor of income tax revision to favor the two-child family (30% vs. 60%), and population stabilization (45% vs. 65%),
 9. were less likely to be skeptical of the abilities of science and technology to cope with population growth (46% vs. 65%), and

agreed less strongly that population growth had adversely affected them,

10. approved less of sterilization, both for themselves and their patients, and
11. were less inclined to encourage their patients to have two or fewer children, or to feel that doctors should have no more than two children on the average (38% vs. 57%).

Catholic doctors and students thus regard population growth with less concern, are more pronatalist, and less receptive to liberal birth control and abortion policies than people of other religions. The largest differences were seen in questions dealing with abortion. The sample of Catholics was too small (71) to allow analysis of these attitudes by age.

L. Responses to questions dealing with concern over population growth and its effects, the potential of science and technology, abortion, and encouragement of small families varied in the expected direction according to how many children the respondent considered "ideal for the average American family," and how many he "expect(ed) to have."

M. Responses from students and doctors in the medical center were generally homogeneous and significantly different only from those of community physicians.

V. Conclusions

The 601 medical students and doctors in this study shared the current concern about population growth and its adverse effects in the United States. Most students and younger physicians felt that the United States should reduce its population growth rate to zero.

In contrast to recent surveys of public opinion, respondents in this study were more receptive toward liberal policies on the availability of abortion and contraception. Large majorities felt that abortion (75%) and contraception (90%) should be part of generally available medical care.

Over half the sample favored an active role for physicians in encouraging patients to have no more than two children. Half were willing to use sterilization and abortion to limit their own families.

Views on birth control, abortion, sterilization, and population growth in the United States varied with the respondent's age, type of practice, ideas about family size, and religion.

Bibliography

- Baird, D., "The Obstetrician and Society," Amer. J. Pub. H., 60: 628-40, April, 1970.
- Barclay, W.R., "Environmental Quality: Its Significance in Our Society," J.A.M.A., 213: 1890-2, 14 Sept. 1970.
- Barnes, A.C., and Zuspan, F.P., "Patient Reaction to Puerperal Surgical Sterilization," Amer. J. Obstet. Gynec., 75: 65-71, Jan. 1958.
- Berelson, B., et al, Family Planning and Population Programs, Chicago: U. Chicago Press, 1966.
- Berelson, B., "Beyond Family Planning," Studies in Fam. Pl., No. 38, Feb. 1969.
- Black, W.D., and Sclare, A.B., "Sterilization by Tubal Ligation - a Follow-up Study," J. Obstet. Gynec. Brit. Comm., 75: 219-24, Feb. 1968.
- Blake, J., "Abortion and Public Opinion: The 1960-1970 Decade," Science, 171: 540-549, 12 Feb. 1971.
- Boulware, T.M., and Ensor, H.C., "Incidence of Postpartum Sterilization," Obstet. Gynec., 29: 147-8, Jan. 1967.
- Cade, J.D., and Jesse, W.F., "Sex Education in American Medical Schools," J. Med. Educ., 46: 64-68, Jan. 1971.
- Cleaver, E., Soul on Ice, New York: Dell, 1968.
- Coale, A.J., "Man and His Environment," Science, 170: 132-6, 9 Oct. 1970.
- Cook, R.C. (ed.), "United Nations: Population Opinion Survey," Population Bulletin, 20: No. 6, Population Reference Bureau, Wash.D.C., Oct. 1964.
- Cronin, T.J., "Influence of Lactation upon Ovulation," Lancet, 2: 422-4, 24 Aug. 1968.
- Darney, P.D., "Attitudes of Married College Students on Overpopulation and Family Planning," Pub. Health Rep., 85: 412-18, May 1970.
- Davis, K., "Population Policy: Will Current Programs Succeed?," Science, 158: 730-39, 10 Nov. 1967.
- Diggory, P.; Peel, J.; and Potts, M., "Preliminary Assessment of the 1967 Abortion Act in Practice," Lancet, 1: 287-91, 7 Feb. 1970.
- Djerassi, C., "Prognosis for the Development of New Chemical Birth Control Agents," Science, 166: 468-73, 24 Oct. 1969.
- Djerassi, C., "Birth Control after 1984," Science, 169: 941-51, 4 Sept. 1970.
- Donaldson, P.J., "Physicians and Methods of Birth Planning," R.I. Med. J., 53: 419-23 passim, Aug. 1970.

- Ehrlich, P., The Population Bomb, New York: Ballantine, 1968.
- Ehrlich, P.R., and Holdren, J.P., "Impact of Population Growth," Science, 171: 1212-7, 26 March 1971.
- Eipper, A.W., "Pollution Problems, Resource Policy, and the Scientist," Science, 169: 11-15, 3 July 1970.
- Ferber, A.S.; Tietze, C.; Lewit, S., "Men with Vasectomies: A Study of Medical, Sexual, and Psychological Changes," Psychosom. Med., 29: 354-66, July-Aug. 1967.
- Frederiksen, H., and Brackett, J.W., "Demographic Effects of Abortion," Pub. Health Rep., 83: 999-1010, Dec. 1968.
- Freedman, R.; Whelpton, P.K.; and Campbell, A.A., Family Planning and Population Growth, New York: McGraw-Hill, 1959.
- Gendel, E.S., and Gleason, J.A., "Education About Abortion," Amer. J. Pub. H., 61: 520-529, March 1971.
- Goodman, L.A., and Kruskal, W.H., "Measures of Association for Cross Classification," Amer. Statist. Assoc. J., 49: 733-64, 1954.
- Greep, R.O., "Prevalence of People," Perspect. Biol. Med., 12: 332-43, Spring, 1969.
- Guttmacher, A.F., "Conception Control and the Medical Profession," Human Fertility, 12: 1-10, 1947.
- Hall, R.E., "Abortion: Physician and Hospital Attitudes," Amer. J. Pub. H., 61: 517-9, March 1971.
- Hanaford, J.M., "Abortion: Crime or Privilege?," Mayo Clin. Proc., 45: 510-6, July, 1970.
- Hardin, G., "The Tragedy of the Commons: The Population Problem has no Technical Solution; It Requires a Fundamental Extension in Morality," Science, 162: 1243-8, 13 Dec. 1968.
- Harrison, C.P., "Teenage Pregnancy - Is Abortion the Answer?," Ped. Clin. N. Amer., 16: 363-9, May 1969.
- Holden, R.T., "Report on the Committee on Human Reproduction of the AMA," Jos. Macy Conference 1967, p. 15-22.
- Hollander, E., "Principles and Methods of Social Psychology," New York: Oxford U. Press, 1971, p. 198-209.
- Hyde, H.V., and Block, L.S. eds., "Family Planning and Medical Education; Report of the 1969 Institute on Medical Education and Family Planning, Association of Medical Colleges," J. Med. Educ., 144: No. 11, part 2, Nov. 1969.
- Kangas, L.W., "Integrated Incentives for Fertility Control," Science, 169: 1278-83, 25 Sept. 1970.

Kelman, H.C., "Process of Opinion Change," Pub. Opin. Quart., 25: 57-70, Spring, 1961.

Kilroy, E.G., "Is Abortion on Demand Good Medicine?," Ohio St. Med. J., 67: 39-46, Jan. 1971.

Kinsey, C.; Pomeroy, W.B.; Martin, C.R.; and Gebhard, P.H., Sexual Behavior in the Human Female, Philadelphia: Saunders, 1953.

Laidlow, R.W., and Bass, M.S., "Voluntary Sterilization as it Relates to Mental Health," Amer. J. Psychiatry, 120: 1176, 1964.

Lee, P.R., "The Role of Government Agencies: The United States," in Calderone, M.S., et al, Manual of Family Planning and Contraceptive Practice, Baltimore: Williams and Wilkins, 1970, p. 74-81.

Lief, H.I., "The Physician and Family Planning," J.A.M.A., 197: 646-50, 22 Aug. 1966.

Lief, H.I., "Sex Education in Medical Schools," J. Med. Educ., 46: 373-4, April 1971.

Machanik, G., "Abortion is the World's Most Common (and Worst) Population Regulator," So. Afr. Nurs. J., 36: 32-3 passim, April 1970.

Mead, Margaret, "Population Control: The Need for an Ethic," J. Med. Educ., 44: Suppl. 2: 30-5, Nov. 1969.

Miles, R.E., ed., "The Future Population of the United States," Population Bulletin, 27: 1, Population Reference Bureau, Wash. D.C., Feb. 1971.

Newcomb, T.; Turner, R.H.; and Converse, P.E., Social Psychology, New York: Holt, Rhinehart, and Winston, 1965. p. 498-534.

Ng, L.K.Y., and Mudd, S., eds., The Population Crisis: Implications and Plans for Action, Bloomington, Ind.: Indiana U. Press, 1964, p. 133-190.

Nortman, D. "Population and Family Planning Programs: A Factbook," Reports on Population/Family Planning, No. 2, June 1971.

Overstreet, E.W., "Permanent Contraception: Sterilization; General Considerations," in Calderone, M.S., et al, Manual of Family Planning and Contraceptive Practice, Baltimore: Williams and Wilkins, 1970, p. 389-97.

Overstreet, E.W., "Legal Aspects: Statutes Governing Sterilization," in Calderone, M.S., et al, Manual of Family Planning and Contraceptive Practice, Baltimore: Williams and Wilkins, 1970, p. 398-404.

Pinto, P.S., "Population Control Begins at Home," Pediatrics, 46: 479, Sept. 1970.

Pohlman, E., "Unwanted Conceptions," Eugenics Rev., 14: 143-54, June 1967.

Pohlman, E., "Wanted and Unwanted," Eugenics Quart., 12: 19-27, March 1965.

- Pohlman, E., Psychology of Birth Planning, Cambridge, Mass.: Schenkman, 1966.
- Prindle, R.A., "The Population Crisis: The Major Problem in Environmental Control," Arch. Environ. Health (Chicago), 19: 564-9, Oct. 1969.
- Rainwater, L., And the Poor Get Children, Chicago: Quadrangle, 1960.
- Ramsey, P., "The Ethics of a Cottage Industry in an Age of Community and Research Medicine," N.E.J.M., 284: 700-6, 1 April 1971.
- Rice, D.T., "Suggestions in Adding Family Planning to the Curriculum of Medical Schools," Pub. Health Rep., 85: 889-95, Oct. 1970.
- Rock, J., "The Population Explosion," R.I. Med. J., 51: 543-7 passim, Sept. 1968.
- Rothenberg, E.N.; Goldey, H.; and Sands, R.M., "The Vicissitudes of the Adoption Process," Amer. J. Psychiatry, 128: 5, Nov. 1971.
- Sarrel, P.M., et al, "The Role of the Medical Center in Sex Education," J. A. Med. Wom. A., 23: 187-94, 1968.
- Shelley, E.D., et al, Opinions and Reports of the Judicial Council, American Medical Association, 1971, p. 3.
- Sloan, M., "Paul R. Ehrlich: A Biologist's Remarks on the 'Population Explosion,'" Ill. Med. J., 138: 246-7, Sept. 1970.
- Smithells, R.W., "The Pediatrician and the Termination of Pregnancy," Lancet, 1: 1-5, Jan. 1966.
- Spivack, S.S.; Cornish, M.J.; and Ruderman, F.A., Doctors and Family Planning, New York: National Committee on Maternal Health, Inc., 1963.
- Stokes, W.R., "Long Range Effects of Male Sterilization," Sexology, Oct. 1965.
- "Survey Shows American Population Concern," data from Commission on Population Growth and the American Future, as quoted in Zero Population Growth National Reporter, 4: No. 1, Jan. 1972, p. 6.
- Tietze, C., "Relative Effectiveness of Contraceptives," in Calderone, M.S., et al, Manual of Family Planning and Contraceptive Practice, Baltimore: Williams and Wilkins, 1970.
- Tschumi, P.A., "Will the Exploding Human Population Succeed in Conserving Nature?," Experientia, 26: 572-6, 15 May 1970.
- Tyler, C.W., and Schneider, J., "The Logistics of Abortion Services in the Absence of Restrictive Criminal Legislation in the United States," Amer. J. Pub. H., 61: 489-95, March 1971.
- "Vasectomies on Increase," American Medical News, Feb. 28, 1972, p. 14.
- Walker, B., "Health Hazards Associated with Urbanization and Overpopulation," J. Nat. Med. Assoc., 62: 259-64, July 1970.

- Walker, W.B., and Hulka, J.F., "Attitudes and Practices of North Carolina Abortion Act of 1967," South. Med. J., 64: 441-5, April, 1971.
- Welch, B.L., "The Generalization of Student's Problem when Several Different Variances are Involved," Biometrika, 34: 28-35, 1947.
- Welch, T.W., "Abortion Referral Services-Profiteers Under Fire," The New Physician, 20: 571-5, Sept. 1971.
- Westoff, C.F.; Moore, E.C.; and Ryder, N.B., "The Structure of Attitudes toward Abortion," Milbank Mem. Fund Quart., 47: 11-37, Jan. 1969.
- Westoff, C.F., "Use of Contraception in the U.S.," in Calderone, M.S., et al, Manual of Family Planning and Contraceptive Practice, Baltimore: Williams and Wilkins, 1970.
- Westoff, C.F., and Westoff, L.A., From Now to Zero, Boston: Little, Brown, 1971.
- Whelpton, P.K.; Eldridge, H.T.; and Siegel, J.S., "Forecasts of the Population of the United States, 1945-1975," Wash. D.C.: U.S. Government Printing Office, 1947.
- Wilson, R.A., "Medicine, Minerals, and Malthus," J. Chron. Dis., 20: 175-8, April 1967.
- Ziegler, F.; Rodgers, D.A.; Kriegsman, S.A., "Effects of Vasectomy on Psychological Functioning," Psychosom. Med., 28: 50-63, Jan.-Feb. 1966.
- _____, "Demographic Boom - Doom or Dud?," R.I. Med. J., 53: 688-90, Dec. 1970.
- _____, "Fertility Control -- When?," J.A.M.A., 214: 1878, 7 Dec. 1970.
- _____, "Teaching Family Planning to Medical Students," Jos. Macy Jr. Foundation Conference, Nov. 3-10, 1966.
- _____, "Tubal Ligation in Population Control," Brit. Med. J., 1: 770-1, 28 March 1970.

VII. Appendix

QUESTIONNAIRE

DIRECTIONS This questionnaire is designed to evaluate your knowledge and attitudes concerning abortion, contraception, population growth, and some aspects of the doctor-patient relationship.

Section I. Please mark either T (for True) or F (for False) OR "DK" FOR "DON'T KNOW" on the answer sheet.

Section II. Attitudes. Please mark your response on the answer sheet. Record whether you

Strongly Agree = SA Agree = A Uncertain = U
Disagree = D Strongly Disagree = SD

Section III. Biographical information. Mark your answers on the answer sheet.

Information obtained on this questionnaire will be used for research purposes only and will in no way be used to identify any individual respondent.

Thank you for your participation in this study.

Population Trends

1. A mother can't become pregnant while nursing.
2. The decline in birth rate in the United States over the past ten years indicates that its population size will stabilize within the next generation.
3. The condom is one of the most reliable contraceptive devices.
4. Abortion has proven to be an effective means of stabilizing population size, in some countries.
- 5.* Douching is an effective form of contraception.
6. It is generally easier to adopt a baby now than it was two years ago.
- 7.* The two most widely used forms of contraception around the world are condoms and withdrawal by the male (*coitus interruptus*).
8. The rhythm method (when couples refrain from intercourse during the six to eight days midway between menstruations) when used properly is one of the most effective methods of preventing conception.
9. At its present rate of growth, the United States will add at least 80 million people to its population during the next 30 years.
- 10.* Lower socioeconomic class couples are generally not interested in limiting the number of children they have.
11. Sterilization of the male by vasectomy usually results in diminished sexual performance or a chronic loss of sex drive.
12. If a hundred couples have intercourse regularly without using contraception for one year, about 80 pregnancies will result.
13. Sterilization of the female by tubal ligation usually results in diminished sexual performance or a chronic loss of sex drive.
14. The majority of babies born in the United States are born to poor or black parents.
15. The diaphragm, when fitted and used properly, is as effective as the pill in preventing conception.
16. The prevention of all unwanted pregnancies would result in stabilization of the United States population size.

Population Attitudes

Directions: The following statements represent attitudes. Each statement has a five-point scale for answers. Indicate your reaction to each statement as follows:

Strongly Agree = SA Agree = A Uncertain = U Disagree = D Strongly Disagree = SD

Mark your answers on the answer sheet. React as spontaneously as you can and be sure to answer every question.

17. * Sex drive and fertility are highly correlated.
18. Overpopulation is currently a problem only in the "developing" countries of Asia, Africa, and South America.
19. Discussion of family size as it affects population size is not appropriate in the context of the doctor-patient relationship.
20. *Contraceptive materials should be made available to persons only if they are married or will be married in a short time.
21. There is enough unused land in the United States to accomodate future population growth.
22. White, middle-class people are having more children than they should.
23. Adoption should be used to increase family size if more than two children are desired.
24. The United States income tax system should be revised to favor the two-child family.
25. Prescription of contraceptives should remain entirely within the domain of obstetrics and gynecology.
26. Voluntary sterilization for contraceptive purposes should not be legalized.
27. All doctors should be able to advise patients about sterilization procedures.
28. On the average, black and poor families should have fewer children than they do now.
29. The United States will be overcrowded in the next 30 years.
30. Preserving a woman's social and emotional well-being is sufficient reason for performing an abortion.
31. The United States is presently overcrowded.
32. A major effect of population growth in the United States has been increased taxes to support poor people.
33. Abortion will someday replace contraception as the primary means of preventing unwanted children in the United States.

34. Doctors' families should have no more than two children on the average.
35. Advances in science and technology will be able to provide for the needs created by population growth in the United States.
36. Overpopulation is currently a problem in the United States.
37. Present birth control methods are sufficiently available to limit one's family size to one's desired number.
38. Doctors should concentrate their family size counseling efforts on the poorer population.
39. Doctors should encourage sterilization either by tubal ligation or vasectomy after a couple has their desired number of children.
40. Food supply will become a problem in the United States as its population grows.
41. Doctors should encourage intelligent patients to have more than two children.
42. *Contraceptive information should be an integral part of sex and family life education for adolescents.
43. * The lower-class male has a higher "sex drive" than others.
44. * Contraceptive materials should be freely available on the individual's request to anyone capable of bearing children.
45. * The possession of contraceptive information is an incitement to promiscuity.
46. Black people are having more children than they should.
47. Overpopulation will become a problem in the United States during the next 30 yrs.
48. Abortion during the first three months of pregnancy should be permitted whenever desired by the pregnant woman.
49. There are enough untapped natural resources available to the United States to provide for its present rate of population growth.
50. A major effect of population growth in the United States is increased environmental pollution.
51. Abortion between the third and fifth months of pregnancy should be permitted when desired by the pregnant woman.
52. Doctors should encourage their patients to have no more than two children.
53. *Lower-class women are typically quite sexually responsive.
54. The United States should try to reduce its population growth rate to zero.
55. Poor people are having more children than they should.
56. Population growth in the United States has adversely affected you.

57. *Abortion is murder.
58. Doctors should encourage their patients to have as many children as they can afford.
59. Present birth control methods are adequate to limit one's family size to one's desired number.
60. Discussion of sterilization should be initiated by the patient, not the doctor.

Section III. Biographical information.

A. Basic information:

- | | | | | |
|--------------|--------|-----------|----------|----------|
| 1) Age _____ | 2) Sex | 1) Male | 3) Race: | 1) White |
| | | 2) Female | | 2) Black |
| | | | | 3) Other |

4) Position:

<u>Medical students</u>	<u>House Staff</u>	<u>Faculty</u>	<u>Private Practice</u>
1) M1	5) Intern	7) Professor	11) solo
2) M2	6) Resident	8) Assoc. Prof.	12) one partner
3) M3		9) Asst. Prof.	13) group
4) M4		10) Instructor	

5) Specialty:

- | | |
|--------------------------|--|
| 1) General practice | 6) Approximate number of hours/week spent teaching medical students: |
| 2) Internal medicine | 1) less than 3 |
| 3) Surgery | 2) 3 to 5 |
| 4) Pediatrics | 3) 5 to 10 |
| 5) Obstetrics/Gynecology | 4) more than 10 |
| 6) Psychiatry | |
| 7) Public Health | |

7) Have you ever been married?

8) Present marital status:

- | | | |
|--------|------------|--------------------|
| 1) Yes | 1) Single | 4) Separated |
| 2) No | 2) Married | 5) Divorced |
| | 3) Engaged | 6) Spouse deceased |

9) Religion:

- | | |
|---------------|----------|
| 1) Jewish | 4) None |
| 2) Catholic | 5) Other |
| 3) Protestant | |

B. Family

- | | | |
|----------------------------------|----------|-------------------|
| 10) Number of children you have: | 1) one | 5) five |
| | 2) two | 6) more than five |
| | 3) three | 7) none |
| | 4) four | |

11. Age of oldest child: 12) Age of youngest child: 13) Do you have at least one child of each sex?

1) 0 to three 1) 0 to three
2) three to six 2) three to six 1) Yes
3) six to ten 3) six to ten 2) No
4) ten to twenty 4) ten to twenty
5) over twenty

14. Total number of children you expect to have: 15) How many do you plan to adopt?

1) one 6) more than five
2) two 7) none
3) three 3) haven't thought 1) One 6) more than five
4) four 4) four 2) two 7) none
5) five 5) five 3) three 8) haven't thought
 about it.

16. How many children were in the home you grew up in (including yourself)?

1) one 4) four
2) two 5) five
3) three 6) more than five

17. Father's occupation: 1) Physician 6) Executive
 2) Clergyman 7) Clerical/Sales
 3) Lawyer 8) Skilled manual
 4) Teacher 9) Semi-skilled
 5) Other professional 10) Unskilled

18) Mother's occupation: 1) Physician 6) Executive
 2) Clergyman 7) Clerical/Sales
 3) Lawyer 8) Skilled manual
 4) Teacher 9) Semi-skilled
 5) Other professional 10) Unskilled
 11) None

19) Population in your childhood community: 1) less than 2,000
 2) over 2,000
 3) over 50,000
 4) over 150,000
 5) over 500,000

What was the earliest sex education you had?

20) in school? 21) in Church? 22) at home?

1) Elementary	1) age 5-11	1) age 5-11
2) Grade 7 to 9	2) age 12-14	2) age 12-14
3) Grade 10-12	3) age 15-18	3) age 15-18
4) College	4) over 18	4) over 18
5) Medical school	5) none	5) none
6) None		

C. Family size:

23) What do you feel is the ideal number of children for the average American family?

1) one 3) three 5) five 7) none
2) two 4) four 6) more than five 8) no opinion

24. How many children comprise a large family? 25) How many children comprise a small family?
- | | |
|----------|-------------------|
| 1) one | 5) five |
| 2) two | 6) more than five |
| 3) three | 7) none |
| 4) four | 8) no opinion |
- | | |
|----------|----------------|
| 1) one | 5) five |
| 2) two | 6) more than 5 |
| 3) three | 7) none |
| 4) four | 8) no opinion |

26. At present, the average number of children per family in the United States is:
- | | |
|--------|---------|
| 1) 1.8 | 9) 2.6 |
| 2) 1.9 | 10) 2.7 |
| 3) 2.0 | 11) 2.8 |
| 4) 2.1 | 12) 2.9 |
| 5) 2.2 | 13) 3.0 |
| 6) 2.3 | 14) 3.1 |
| 7) 2.4 | 15) 3.2 |
| 8) 2.5 | 16) 3.3 |
27. In order to maintain a stable population size, the average number of children per family in the United States would have to be:
- | | |
|--------|---------|
| 1) 1.8 | 9) 2.6 |
| 2) 1.9 | 10) 2.7 |
| 3) 2.0 | 11) 2.8 |
| 4) 2.1 | 12) 2.9 |
| 5) 2.2 | 13) 3.0 |
| 6) 2.3 | 14) 3.1 |
| 7) 2.4 | 15) 3.2 |
| 8) 2.5 | 16) 3.3 |

D. Personal information (Again, this will be held confidential):

28. What is your primary sexual orientation?

1) Heterosexual 2) Homosexual 3) Bisexual

How many times have you had each of the following experiences:

	(1)	(2)	(3)	(4)
29. Intercourse without contraception	None	Once	2-5 times	over 5
30. Intercourse using rhythm	None	Once	2-5 times	over 5
31. Intercourse using condom	None	Once	2-5 times	over 5
32. Intercourse using foam	None	Once	2-5 times	over 5
33. Intercourse using diaphragm	None	Once	2-5 times	over 5
34. Intercourse using IUD	None	Once	2-5 times	over 5
35. Intercourse using Pill	None	Once	2-5 times	over 5
36. Intercourse using withdrawal Intercourse, then abortion	None	Once	2-5 times	over 5
37) at less than 3 months of pregnancy	None	Once	2-5 times	over 5
38) between 3-6 months of pregnancy	None	Once	2-5 times	over 5

After how many children would you be willing to have each of the following procedures performed in order to limit your family's size?

39. Abortion in the first three months of pregnancy.
 (1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
 (9) does not apply.
40. Abortion in the third to fifth months of pregnancy
 (1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
 (9) does not apply.

41. Irreversible female sterilization by tubal ligation.
(1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
(9) does not apply
42. Reversible female sterilization by some future method
(1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
(9) does not apply
43. Irreversible male sterilization by vasectomy
(1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
(9) does not apply
44. Reversible male sterilization by some future method
(1) one (2) two (3) three (4) four (5) five (6) more than 5 (7) none (8) never
(9) does not apply
45. Have you had a vasectomy? 46. Have you had a tubal ligation?
1) yes
2) no
3) does not apply
- 1) yes
2) no
3) does not apply
- II. Your practice: (medical students may omit this section)
47. Do you manage the contraceptive needs of your patients?
1) yes, as a rule
2) yes, on occasion
3) no
49. About what proportion of your patients are on welfare?
1) 0-10 per cent
2) 10-25 per cent
3) 25-50 per cent
4) 50-75 per cent
5) 75-100 per cent
51. Have you ever performed an abortion?
1) yes, many
2) yes, one or two
3) no
43. About what proportion of your patients are Black?
1) 0-10 per cent
2) 10-25 per cent
3) 25-50 per cent
4) 50-75 per cent
5) 75-100 per cent
50. About what proportion of your patients are in the 15-45 years old age group?
1) 0-10 per cent
2) 10-25 per cent
3) 25-50 per cent
4) 50-75 per cent
5) 75-100 per cent

COMMENTS:

YALE MEDICAL LIBRARY

Manuscript Theses

Unpublished theses submitted for the Master's and Doctor's degrees and deposited in the Yale Medical Library are to be used only with due regard to the rights of the authors. Bibliographical references may be noted, but passages must not be copied without permission of the authors, and without proper credit being given in subsequent written or published work.

This thesis by has been
used by the following persons, whose signatures attest their acceptance of the
above restrictions.

NAME AND ADDRESS

DATE

Deborah M. Berkowitz 611 Whitney Ave. 3B

11/3/76

